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A Consideration OF THE TREATMENT OF FOREIGN BODIES IN THE LOWER AIR-PASSAGES AND THE ŒSOPHAGUS:

A PLEA FOR ENDOSCOPY, OR THE DIRECT METHOD.

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"There is nothing hid, which shall not be manifested."
St. Mark iv. 22.

Definition of terms.—I have heard it stated that during a comparatively recent examination one of the examiners on hearing a candidate suggest the use of a bronchoscope, turned to his colleague and whispered, "What is a bronchoscope?" In case any casual reader of this communication should be equally ignorant of one of the most brilliant achievements in modern surgery, let me define some terms which might otherwise discourage him.

The general term "endoscopy" includes those methods by which a direct inspection may be made of the lower air-passages, the œsophagus, and stomach. When used for individual regions we speak of direct pharyngoscopy, laryngoscopy, tracheoscopy, bronchoscopy, œsophagoscopy, and gastroscopy. Peroral endoscopy implies that the examination is made by way of the mouth, in contradistinction to such terms as "lower" or "tracheotomic" tracheoscopy or bronchoscopy, which indicate that direct inspection has been made through an opening in the trachea. On this occasion I shall have nothing to say concerning gastroscopy.

THE CLAIMS OF ENDOSCOPY.

The accompanying illustrations (Figs. 1, 2, and 3), with the histories of some of the foreign bodies removed by me from the lower air-passages and the gullet during the past ten years, seem to warrant attention being again drawn to this oft-recurring accident, and offers an occasion for advancing the claims of endoscopy, or the direct method of removal, as the only safe and certain method of treatment. If any excuse for further ventilation of the subject were necessary the following case would surely provide it.

A man, aged 52, was sent into University College Hospital last autumn in order that a tooth-plate (Fig. 3, No. 15) should be removed from his gullet. The denture had been swallowed during sleep two nights before admission. The morning after the accident he went to a hospital, and two prolonged but ineffectual attempts were made to force the foreign body into the stomach by bougies. I saw the patient half an hour after admission to University College Hospital; he looked ill, pale, and collapsed, and complained of pain in the left side of the neck extending into the chest. He had swallowed nothing but a little milk since the accident. A general anæsthetic was administered and a direct examination of his throat, pharynx, and œsophagus made. This revealed a sad state of affairs. The lower pharynx was almost completely filled by sausage-like folds of œdematous mucous membrane, which involved the epiglottis, the aryepiglottic folds, the arytenoid region, and the lateral walls of the pharynx. It was as easy to understand why the poor fellow could not swallow as it was difficult to explain why he had not been suffocated by the obstruction around the upper aperture of the larynx. By direct œsophagoscopy and with some little difficulty I found my way into the upper end of the œsophagus and saw a small portion of the denture about an inch above the level of the manubrium sterni; it was surrounded by darkish-grey folds of œdematous and lacerated mucous membrane. The foreign body was seized by fine forceps and removed. The whole procedure lasted some five minutes. Pulmonary symptoms of a septic character rapidly developed, and the patient died the third day after operation.

The autopsy revealed two large sloughing perforations of the œsophagus, and it was obvious that through one of these the bougie had passed four inches downwards into the adjoining mediastinum. There was a large pleural effusion on the left side and a smaller one on the right. Comment is needless!

And now for the other side of the picture. Let us take Fig. 1, No. 4, an account of which appeared in THE LANCET, April 22nd, 1911. I saw the patient with Sir Rickman Godlee, and cannot do better than insert his own description of the case.

"It was that of a young lady who, whilst eating some mutton broth, swallowed a piece of bone the wrong way. She was foolish enough to ask the advice of a chemist, and he had the hardihood to try to push it down with the handle of a tooth-brush. A spasmodic cough quickly set in, and lasted for two hours. The medical man who was called in could naturally see nothing; she went on coughing more or less continuously for four days, and after ten days came to London with a temperature of 100° F. A very indefinite result was obtained by an X ray photograph, and when I saw her four days afterwards the temperature was 101° in the morning and 102·5° in the evening. There were a little deficiency of movement in the right lower lobe and a slight deficiency of the entry of air into this part of the lung. A very few crepitations were also to be heard. The cough for the moment was in abeyance, but I was told that several attacks had occurred in the course of the day. The physical signs were so slight that if one had not been aware that such is often the case in the early stages of this condition one might have been excused for counselling delay; but I strongly urged that Mr. Tilley should be asked to see the patient next morning, and in this case the piece of bone was readily demonstrated to us at the lower end of the right bronchus, and was removed in the course of a few minutes with the forceps. Already after ten days' residence in the bronchus it was soaked with pus and horribly offensive. The patient has made a complete recovery."

The portion of bone measured 7/12 inch in length, 1/3 inch in breadth, and 1/6 inch in thickness.

In the paper above quoted I recorded another case with an equally happy issue, viz.:—

Removal of a portion of rabbit bone which had been impacted in the right bronchus for more than three years, and had produced symptoms of bronchiectasis. The patient was desperately ill, his breath and expectoration extremely offensive, marked clubbing of fingers and toes, pulse 80, temperature 100·5° F., and respirations 36. Radiography did not reveal the presence of any foreign body in either lung! After removal of the bone the patient rapidly recovered and put on 28 lb. in six weeks.

In the course of this short paper I hope to establish two points. 1. That in the direct method of endoscopy we possess the only certain and safe method of dealing with foreign bodies in the lower air-ways and the œsophagus, because we can see them and remove them under the guidance of the eye. 2. That it is the only justifiable method of treatment in the large majority of cases.

The qualification "large majority" is necessary because many foreign bodies are swallowed and pass from the rectum without let or hindrance. This fact was tersely expressed by an American who, after listening to a discussion on the relative merits of various endoscopic instruments, said that the best coin-catcher he had ever seen was the old-fashioned English bed-pan! Unfortunately, however, many foreign bodies never reach that desirable haven of rest, and it is for such as these that some of my experiences may be helpful to other members of the profession.

INSTRUMENTS.

The endoscope most commonly used in this country is Brüning's modification of Killian's bronchoscope (Fig. 4); it serves for the examination of the lower pharynx, larynx, trachea, bronchi, and the œsophagus. The source of illumination is a small electric lamp contained in a carrier, to which the proximal end of the bronchoscope or œsophagoscope is fixed, and the mechanism is so arranged that it is possible to pass forceps, hooks, or probes through the tube without obstructing the view of the observer.

Most of the foreign bodies illustrated in this paper were removed by means of Brüning's instrument, but I have now discarded it in favour of distal illumination, as advocated by Chevalier Jackson (Pittsburg, U.S.A.). (Fig. 5.) The great advantage of the distal light is the freer field for the observation and manipulation of instruments which it affords—or—as an American friend expressed it to me: "If you want to know what is going on in a room it is easier to see through the open door than by looking through the keyhole."

It is as unnecessary as it is impossible to illustrate in this paper the various types of tubes, forceps, &c., which have been introduced by endoscopists for removing different kinds of foreign bodies in the nearer or in more remote regions of the lower air-ways and the œsophagus. They may be seen in any instrument-maker's catalogue. Fig. 6

illustrates a well-known type of forceps, and Fig. 7 a series of terminals which can be used in accordance with the shape or consistence of the particular foreign body to be dealt with.

I should only like to emphasise (*a*) the importance of observing strict asepsis in instruments and in the manipulation which their use demands; (*b*) the keeping in readiness of a plentiful supply of swab-holders; (*c*) the value of some form of suction apparatus, such as a lateral channel in the tube itself, and fixed to a continuous aspirator, or, in the case of the gullet, a Sonoran's suction apparatus. Few things are more tantalising to the endoscopist than for the delicate manipulations to be frequently interrupted by accumulations of mucus, muco-pus, or blood in the end of the tube.

We may now proceed to discuss some points in the mode of access, etiology, history, symptoms, and treatment of a foreign body lodged in the lower air-passages or in the œsophagus.

MODE OF ACCESS.

The majority of foreign bodies enter the lower air-passages by some ill-timed inspiratory effort—e.g., a box-maker had a tack (Fig. 1, No. 5) in her mouth when a fellow worker slapped her on the back—a sudden gasp and the tack was carried down into the right bronchus!

A similar cause may take the foreign body into the gullet—e.g., a nurse had an open safety-pin (Fig. 2, No. 4) in her mouth when a picture fell from the wall behind her; a sudden inspiration, followed by the act of swallowing, and the intruder lodged in the gullet. About two days later I removed it by the direct method with distal illumination.

It must not be forgotten that the presence of a foreign body in the lower air-passages is sometimes the result of an operation on the nose, naso-pharynx, throat, or neck. In nasal operations the end of an instrument may snap off, or a portion of bone, cartilage, a swab, or pathological tissue may slip from the grasp of the forceps and disappear into the lower air-ways. On one occasion I saw a patient nearly suffocate as a result of a tonsil dropping from the guillotine into the larynx. Many years ago when I was removing a large thyroid gland full of multiple adenomata the patient ceased breathing, became deeply cyanosed and the trachea was opened. Four days later she gave a violent cough and expelled a portion of the anæsthetist's sponge which he had used for clearing the throat of mucus.

The large majority of foreign bodies is met with in children because their examination of a small object is rarely complete until they have put it in their mouth. Any pathological condition of the throat which impairs its normal muscular activity or sensation favours the entrance of foreign bodies into the lower air-passages—e.g., the ravages of tertiary syphilis, malignant disease and tuberculous ulceration. Sensation may be impaired by central nerve lesions, but more commonly by the drunken state, or any other form of unconsciousness.

HISTORY.

In the first place it must be remembered that there may be no history of the accident at all—e.g., in the case of a child, who may conceal the fact from fright, fear of scolding, or ignorance. An adult may inhale or swallow a foreign body during sleep (Fig. 3, No. 15), drunkenness, or while unconscious from any other cause.

But when a definite history *is* forthcoming, the surgeon must neither overrate nor underestimate its importance. The value of the patient's assertion will be enhanced if it is confirmed by a reliable person present at the time of the accident, especially if definite symptoms were then produced. For example, cough and dyspnœa would suggest that the foreign body entered the lower air-passages, while difficulty in swallowing would point to the œsophagus. On the other hand, the absence of such symptoms some hours, days, or weeks after the accident will not preclude the presence of a foreign body, because it is well known how tolerant the air- and food-passages become if they are not extensively obstructed.

Furthermore, the traumatism caused by a foreign body may persist, and by its sensations convince the patient that it is still present, although it may have been coughed out, or swallowed and passed from the body altogether. I believe this persistence of the sensation of a foreign body is more prolonged in the case of the throat than it is in the eye.

Again, there are recorded cases in which the patient *thinks* he has swallowed a foreign body, and accurately describes the sensations of its presence, whereas further search has proved that the supposed intruder was not swallowed at all; this has happened with dentures, and illustrates the extraordinary power of mind over body.

The surgeon must remember that the patient may use the term "swallow" to include inhalation as well as deglutition.

Finally, the period of quiescence, which may last for hours, days, weeks, months, or even years, following the entry of a foreign body into the air- or food-passages, must not lull the surgeon into a sense of false security, and still less should he assure the patient that all is well unless a very thorough examination has proved this to be the case. The quiet period will almost inevitably be followed sooner or later by symptoms of irritation or inflammation set up by the foreign body.

In every case where there is a definite history of a foreign body having been inhaled or swallowed, or where symptoms arouse such a suspicion, the question should not be allowed to remain unanswered until the foreign body has been removed or expelled, or its absence proved by a careful and searching examination by every means in our possession.

SYMPTOMS.

It has just been stated that a foreign body may lodge in the larynx or œsophagus for varying periods of time without any definite symptoms which would arouse suspicion of its presence. I have seen a pin removed from a larynx where it had been impacted for 13 years, and only caused occasional fits of coughing. Nevertheless, it is probable that its initial entry caused symptoms which were misconstrued at the time.

Again, a patient complained of "foul breath" and "cough." Laryngoscopic examination revealed what appeared to me to be a dark ozænic crust in the subglottic region. I was wrong; it was a foreign body!

Such instances of toleration might lead the inexperienced to say, "Why make such a fuss about the matter if a foreign body causes so little trouble?" The answer is two-fold: (1) Such toleration is the exception rather than the rule; and (2) the day of reckoning will almost surely come, and probably sooner than later, and if deferred, the pathological changes set up by its presence will render removal more difficult and often more hazardous.

Then again, the subjective symptoms of locality are sometimes very deceptive, because a patient's power of localisation is often misleading—e.g., a foreign body lodged in the naso-pharynx only produced a feeling of intense pricking and discomfort in the larynx.

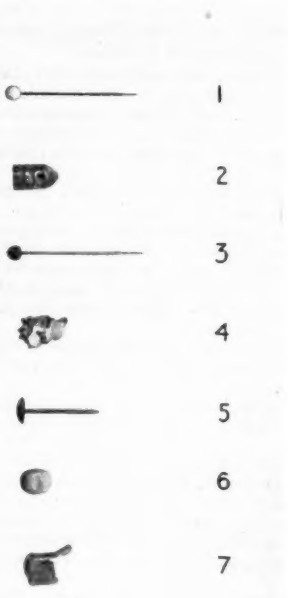
Furthermore, a large foreign body in the gullet may produce intense dyspnœa and stridor by bulging forward the soft, yielding, posterior wall of the trachea, and the surgeon might be led to perform tracheotomy and still fail to find the cause of trouble.

Finally, a foreign body may change its position—e.g., I saw a dark foreign body in the left ventricular band of a soldier who had been shot in the neck. I had no means for endoscopy at the time, and when, a few days later, I passed the bronchoscope the larynx was clear, but I removed a portion of shrapnel casing from his left bronchus. (Fig. 1, No. 7).

Perhaps such instances will discourage the novice in this subject, and he may be inclined to deduce from them that a foreign body in the lower air-way or in the gullet produces no symptoms at all, or that if any are present they are so indefinite as to be of little diagnostic value. This would be a wrong conclusion, and I hope to show him ways by which he may avoid such a false deduction. The pitfalls are exposed only to make it easier to avoid them. As a matter of fact, when a foreign body enters the larynx, trachea, bronchi, or œsophagus its presence nearly always produces symptoms during the *early* hours or days of its lodgment, and then is the time to act. If one waits the symptoms may subside, or change in their nature, or become so quiescent that both patient and surgeon are put off their guard.

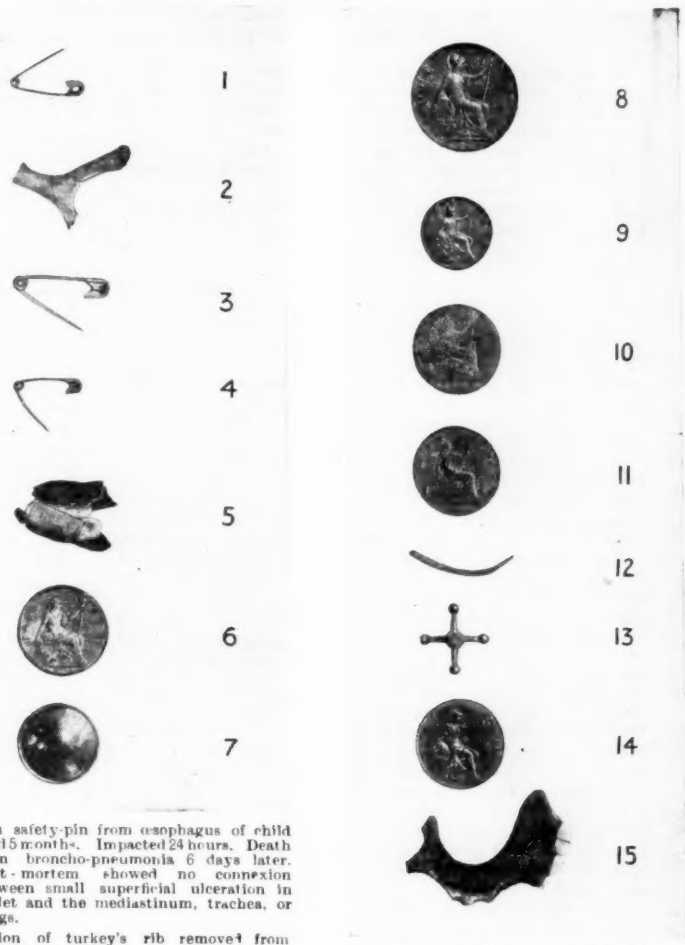
When a foreign body enters the regions under discussion the following symptoms may be expected: (1) Obstructive, and these may be caused by the size of the foreign body or by the spasm which it induces; (2) irritative, produced by the presence of the foreign body; (3) inflammatory changes which are set up at a variable period after the lodgment of the foreign body.

FIG. 1.—*Foreign bodies removed from the bronchi.*



1. Shawl-pin removed from left bronchus of adult female.
2. Metal cap of lead pencil removed from girl aged 7. Impacted for 7 weeks. Removed through tracheotomy wound after ineffectual attempts by peroral bronchoscopy. Uneventful recovery.
3. Shawl-pin removed from left bronchus of girl aged 23. Impacted 2 months. Removed by peroral bronchoscopy. Recovered. (*Vide* THE LANCET, Nov. 7th, 1908).
4. Mutton bone from right bronchus of a young lady. Impacted about a fortnight. Removed by peroral bronchoscopy. (*Vide* THE LANCET, April 22nd, 1911). Recovered.
5. Tack from right bronchus of girl aged 17. Impacted 3 weeks. Removed by peroral bronchoscopy. Recovered. Symptoms: Pain in epigastrium which radiated towards right side of chest. During the lodgment of the tack high degrees of pyrexia occurred at night and on two occasions reached 104·6°.
6. Green pea removed from bronchus of old man after 24 hours' impaction. (*Vide* Proc. Internat. Congress of Med., Lond., 1913, Sec. XVI., Pt. II.). Recovered. Peroral bronchoscopy.
7. Portion of shrapnel casing removed from left bronchus of soldier after 1 week's impaction. Recovered. Peroral bronchoscopy.

FIGS. 2 and 3.—*Foreign bodies removed from the œsophagus.*



1. Open safety-pin from œsophagus of child aged 5 months. Impacted 24 hours. Death from broncho-pneumonia 6 days later. Post-mortem showed no connexion between small superficial ulceration in gullet and the mediastinum, trachea, or lungs.
2. Portion of turkey's rib removed from œsophagus of a lady after 3 days' impaction and after unsuccessful attempts had been made to push the foreign body into the stomach by an umbrella probang. Recovered.
3. Open safety-pin successfully removed from a child after 2 days' impaction.
4. Open safety-pin successfully removed from a nurse after 4 days' impaction.
5. Teat of "comforter" successfully removed from gullet of a child 4 days old. It caused complete dysphagia, and is the youngest case on record in which endoscopy has been employed for removal of a foreign body.
6, 10, 11, 14. Half-pennies successfully removed from the œsophagus of young children.
7. Coachman's button successfully removed from gullet of a child.
8. Penny removed from gullet of girl aged 13.
9. Farthing removed successfully from child aged 4 years.
12. Portion of rabbit's rib removed from œsophagus of female adult. Recovery.
13. Metal toy successfully removed from œsophagus of a child after a few hours' impaction.
15. Denture removed from gullet of man aged 52 (*Vide* text.) Patient died as a result of traumatisms induced by blind bougieing.

Throat.—Long, narrow foreign bodies, such as pins, needles, and especially small fish-bones, are liable to be caught in the tonsils or in the pillars of the fauces. They produce a certain amount of pain of a pricking nature, which is most felt on swallowing.

Pharynx.—A large bolus of food may lodge in the lower pharynx and produce difficulty in swallowing as well as in breathing if the glottic aperture of the larynx be encroached upon. Sharper and smaller foreign bodies may cause pain on swallowing and later on set up inflammatory changes leading to more localised or more diffuse forms of inflammation.

Larynx.—Intense croupy cough, dyspnœa, and aphonia are the commonest and immediate symptoms following the entry of a foreign body into the larynx. A familiar instance is afforded by the "crumb of bread which went the wrong way." A larger object may produce immediate death by suffocation, which is brought about by the mechanical obstruction as well as by spasm of the laryngeal muscles.

In the case of small foreign bodies which do not occlude a large portion of the glottis the initial symptoms of irritation may subside and only a certain amount of aphonia may remain. At a later date, when inflammatory symptoms arise, an increasing amount of dyspnœa may be noticed.

Sharp objects like fish-bones or pins may lodge in the aryepiglottic folds or in the ventricular bands, where they produce considerable pain on swallowing. Inflammation or abscess formation may lead to a certain amount of stridor and dyspnœa by encroachment of the swollen tissues on the glottic aperture. Perichondritis of the laryngeal cartilages and ankyloses of the crico-arytenoid joint have resulted from such inflammations.

Trachea.—A small foreign body in the trachea may produce no symptoms unless it is lodged, or intermittently forced into the sensitive subglottic region, when violent coughing and laryngeal spasm are characteristic symptoms. A large foreign body will necessarily produce dyspnœa, especially if it rests on the carina and obstructs the entry of air into each bronchus.

Bronchus.—When a small foreign body lodges in a bronchus, which it does not completely obstruct, no symptoms may be noticed for a considerable period, until irritation or inflammation has been set up by its presence. On the other hand, the patient may suffer from a chronic cough or a fixed pain in the chest, back, or even in the stomach (*vide infra*, case of bronchiectasis in adult).

More or less complete obstruction of a main bronchus will involve retention of secretions behind the foreign body, followed by bronchiectasis, septic pneumonia, abscess, or gangrene.

Hæmoptysis and pyrexia are uncommon and generally late symptoms which rather indicate ulceration and suppuration around a foreign body. In the case of a shawl-pin (Fig. 1, No. 3) which had been lodged in the left bronchus of a girl for two months, cough, occasional expectoration of blood-stained mucus, evening temperature 99°, with some crackling râles in the third left interspace, naturally raised the question of early phthisis. Radiography clearly showed a pin in the left bronchus and I removed it.[1]

Such cases illustrate the importance of thinking of a foreign body where the appearances or the symptoms of an obscure unilateral inflammatory affection of the lower air-passages are present, even though the patient may have no recollection of having inhaled or swallowed any foreign body.

With reference to this point, Dr. J. W. Boyce points out the distinction between those signs caused merely by the presence of a foreign body and those resulting from the inflammatory accidents which rapidly follow.

"Tuberculosis without bacilli in the sputum, particularly if located towards the base of the right lung; unilateral or unilobar bronchitis, more particularly if hæmorrhagic or fœtid in character; atelectasis, abscess, or gangrene not otherwise explainable—these conditions should suggest the possibility of the presence of a foreign body in the bronchi."[2]

Complete obstruction will produce collapse of the lung, diminished respiratory movements on that side, followed by inflammatory changes of a septic nature.

Unilateral bronchiectasis in a child should always excite suspicion of a foreign body. The writer has recorded the same condition in an adult which was caused by the impaction, *for three years*, of a piece of rabbit-bone in the right bronchus.[3]

The right bronchus is more likely to be invaded than the left, because it is larger and more in the direct line of the trachea.

Œsophagus.—The vast majority of foreign bodies in the œsophagus lodge in its upper third opposite the upper thoracic aperture (Fig. 8); this is possibly due to the fact that this region is usually in a collapsed condition and not subject to the expansile effect of inspiration which dilates the intrathoracic portion of the gullet.

Symptoms may or may not be present, but it must be remembered that a small foreign body which is quite incapable of blocking the lumen of the viscus may yet induce complete inability to swallow food or liquid. This may be due to secondary spasm or to the accumulation of food around the intruder. Pain, discomfort, or distress is nearly always complained of, and especially during the act of swallowing.

A larger foreign body may cause considerable dyspnœa by bulging forward the soft posterior wall of the trachea (*vide supra*).

Cough is a not uncommon symptom, and may be due to reflex irritation, overflow of secretions into the larynx, or later on to ulceration and a fistulous communication between the œsophagus and the trachea.

While a foreign body may lie quiescent in the gullet for years (Braden Kyle, Philadelphia, removed a denture after 17 years' sojourn), yet sooner or later it will cause the death of the patient unless it is removed by nature or art. The fatal result is usually due to mediastinal cellulitis, abscess formation, or erosion of one of the large blood vessels. Such complications will occur more quickly in the case of a sharp than a rounded or smooth foreign body.

PROCEDURE IN CASE OF A SUSPECTED FOREIGN BODY IN THE AIR- OR FOOD-PASSAGES.

This will involve: (1) Careful consideration of the history (*vide supra*). (2) Indirect examination of the throat, naso-pharynx, pharynx, and larynx. (3) Physical examination of the neck and chest. (4) Radiography. (5) Endoscopy.

The value of the history of the accident has been already discussed.

The examination of the throat, naso-pharynx, pharynx, and larynx by the indirect method must be thorough, and a good light is essential. Small, sharp foreign bodies, such as translucent fish-bones, are difficult to see, and are closely simulated by strings of mucus. Sometimes they can be felt by gentle palpation with the index finger, but care must be taken not to dislodge the foreign body in this way or to force it more deeply into the tissues.

Localised congestion may serve as a guide to the situation of a foreign body if it has been retained long enough to set up inflammatory changes.

The value of an expert examination of the chest is obvious when there is any suspicion of a foreign body having entered a bronchus.

Radiography will be of inestimable service when the foreign body is opaque to the X rays. An instantaneous exposure may reveal the presence of a foreign body in a bronchus which would have been undetected or obscured by a longer exposure, during which the disturbing effects of cardiac and respiratory movements impair the definition of the intruder.

Even when a foreign body is not opaque to the X ray, yet the secondary lesions produced by it may be detected by radiography, and thus help in its localisation. By the many devices of the expert radiographer the exact location of a foreign body relative to an external landmark can be determined.

The writer was one of the first to draw attention to the value of combined endoscopy and fluoroscopy in the case of minute foreign bodies lodged in the bronchi.

It should be distinctly understood that a negative result of radiography does not preclude the presence of a foreign body: (1) Because the latter may not be opaque to the X ray; (2) it may not be the same as that of which we get a history; (3) a metallic body may not show in a very stout patient, especially when considerable inflammatory changes have taken place around it.

PERORAL ENDOSCOPY: TECHNIQUE AND RESULTS.

"Seeing is believing," and when the history of the accident, the symptoms, and the radiographer fail us we have in the direct method an almost certain method of detecting and removing a foreign body lodged in the lower air-passages and the œsophagus.

By its means we can light up the dark recesses of the lower pharynx. The vocal cords are revealed with incredible distinctness, and he must be a poor soul who is not charmed by their beauty and the gracefulness of their coördinated movements. Passing beyond the glottis, the trachea is entered and its "low visibility" dispelled by the white light of the incandescent lamp; as we approach its lower regions, the communicated pulsations of the heart and large vessels is an arresting feature, and I recollect very well the mixed feelings of delight, astonishment, and awe when, for the first time, I looked into what seemed to be the very centre of life's mechanism. At the end of the tube may now be seen the "carina," and easily visible to the right of it is the opening of the corresponding bronchus, while on the other side a less extensive view of the left bronchus meets the eye. By lateralising the end of the tube we may explore the depths of the bronchi and look into the openings of the larger bronchial tubes; with finer and suitable instruments it will be possible to penetrate their larger branches and even to reach the neighbourhood of the pleura.

Withdrawing the bronchoscope, it is the work of a moment to replace it by the œsophagoscope, and then, with care and caution, to enter the constricted upper end of the gullet. Keeping the end of the tube carefully in the axis of that viscus, we pass downwards and slightly backwards

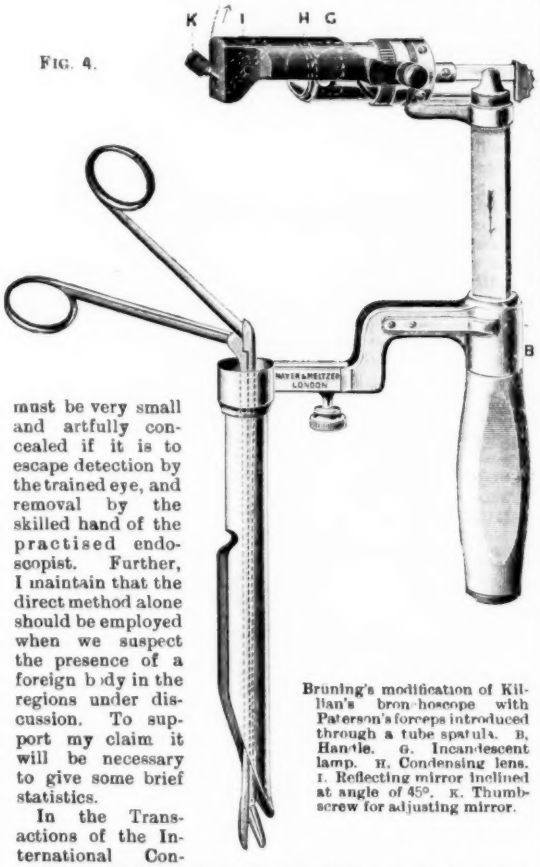
[1] Vide THE LANCET, Nov. 7th, 1908.
[2] J. W. Boyce, from "Tracheo-bronchoscopy, Œsophagoscopy, and Gastroscopy," by Chevalier Jackson, M.D.
[3] Vide THE LANCET, April 22nd, 1911.

through its collapsed cervical portion till the thoracic portion is reached. Here the patency of the œsophagus is a noticeable feature in spite of three slight constrictions. The first of these is towards the left of the anterior wall, and in an adult is about 23 cm. from the incisor teeth; it is the impress of the aorta. More prominent and generally easier to distinguish is the second narrowing, which takes the form of an antero-lateral fold still more to the left than the first-named; this is caused by the left bronchus and is situated about 27 cm. from the teeth. The third is a more definite and concentric narrowing, and marks the spot where the œsophagus passes through the diaphragm, and is some 36 cm. distant from the above-named starting-point.

The careful observer will not fail to notice the communicated pulsations of the heart and large vessels, the opening and closing of the gullet with inspiration and expiration, and the complete absence of particles of food within the gullet—the normal œsophagus is very intolerant of any loiterers. Withdrawing the tube with a gentleness only surpassed by that with which it was introduced, we realise an additional and almost prophetic significance in the words of the Master, already quoted: "There is nothing hid, which shall not be manifested" (St. Mark iv., 22).

At this point, then, I would claim that in endoscopy we have an almost perfect method of inspecting every inch of the hitherto inaccessible and dark regions of the lower air-passages and of the œsophagus, and that a foreign body must be very small and artfully concealed if it is to escape detection by the trained eye, and removal by the skilled hand of the practised endoscopist. Further, I maintain that the direct method alone should be employed when we suspect the presence of a foreign body in the regions under discussion. To support my claim it will be necessary to give some brief statistics.

FIG. 4.

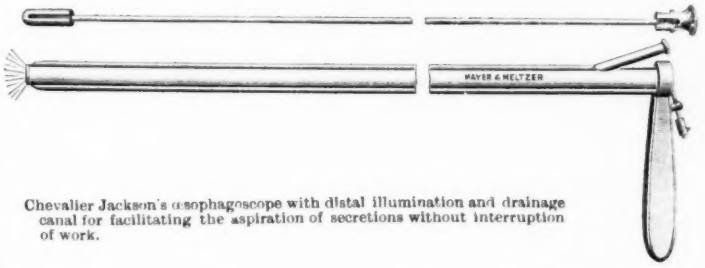


Bruning's modification of Killian's bronchoscope with Paterson's forceps introduced through a tube spatula. B, Handle. G, Incandescent lamp. H, Condensing lens. I, Reflecting mirror inclined at angle of 45°. K, Thumb-screw for adjusting mirror.

In the Transactions of the International Congress of Medicine, London, 1913 (Section XV., Part I., p. 3), Chevalier Jackson, Pittsburg, U.S.A., referring to his own experience, writes:—

"Of the last 182 consecutive cases of bronchoscopy for foreign body, there was a total of 3 deaths (1·7 per cent.) from any cause whatever within one month, though not all of the cases could be followed this long. Of the 182 cases the foreign body was removed in 177. Of the 5 failures to remove a foreign body known to be present, all were failures to find a small foreign body that was in a small branch bronchus close to the periphery of the lung."

FIG. 5.



Chevalier Jackson's œsophagoscope with distal illumination and drainage canal for facilitating the aspiration of secretions without interruption of work.

With reference to œsophagoscopy, Dr. Jackson said:—

"Of the 206 cases of œsophagoscopy for foreign bodies in the hospital of Pittsburg and in the author's work in other cities the foreign body was removed in 198 and escaped downward in 8. There were 4 deaths, one in a woman of 56 with advanced nephritis. The other 3 deaths were in patients admitted with some lacerations of the œsophagus from previous attempts at œsophagoscopy."

At the same Congress equally remarkable statistics concerning the results of endoscopy in the European clinics were brought forward.

To sum up, we may say that a perusal of the enormous amount of literature on the subject justifies the statement that: (1) The introduction of the direct method of removal of foreign bodies from the lower air-passages and the œsophagus has reduced the mortality of all cases to 8 or 9 per cent., and to a much smaller degree if the case be treated early. (2) Blind groping in these regions has been responsible for an appalling number of fatalities. For this reason coin-catchers, umbrella probangs, and such-like should be relegated to the historical sections of anatomical museums. With regard to the risks of the direct method I shall have something to say at the conclusion of this paper.

PREPARATION AND POSITION OF PATIENT: ANÆSTHESIA.

Preparation of the patient.—In so far as the emergency of the case renders it possible, this should be the same as for any surgical operation. Particular attention should be paid to cleansing the patient's mouth and teeth, so as to avoid contamination of the tubes and instruments which will be introduced.

Anæthesia.—In this country a general anæsthetic is nearly always used for the removal of foreign bodies in the trachea or œsophagus, unless it is contra-indicated by the presence of extreme dyspnœa, when tracheotomy under local infiltration anæsthesia may be necessary. In America, and mainly owing to the teaching and practice of Chevalier Jackson, neither general nor local anæsthetics are employed. At the Congress already referred to he stated that "in the last 107 bronchoscopies and œsophagoscopies for foreign bodies in children under 6 years of age done in my clinic no anæsthetic, general or local, has been used." But we must remember that Dr. Jackson has at his command trained assistants and nurses—a happy combination which alone renders such excellent "team work" possible.

If a general anæsthetic is employed it will be wiser to use ether preceded by a hypodermic injection of 1/100 gr. of atropine, and this even in young children. Under such circumstances I have never seen a fatality either during or after general anæsthesia which could be ascribed to its employment.

There can be no objection to using local anæsthetics for relieving discomfort or for minimising reflex activity, provided we use cocaine with discretion, and bear in mind that children are more susceptible to its toxic effects than adults. On the other hand, general anæsthesia will be *indicated* where a foreign body is tightly impacted in the food- or air-passages, and in these circumstances the relaxing effect of general narcosis will be of immense advantage.

Position of the patient.—For carrying out peroral endoscopy the patient should lie on his back with the shoulders slightly raised by a narrow sand-bag. The occiput should then be tucked under the cervical spine in order to bring the mouth, throat, and larynx as far as possible into a straight line. The passage of the tube through the larynx and trachea to the bronchi, or through the cricoid narrowing into the gullet, will necessitate movements of flexion and rotation of the head which can only be learnt by actual practice, and hence the necessary manipulations cannot be described with any advantage in this article.

TREATMENT.

When a patient presents himself with the history of having recently swallowed a foreign body any symptoms which support that view should be noted; and while preparations are being made to remove the foreign body the patient should be made to lie down with the head on a level with the body, so that the action of gravity may not assist the intruder to a lower level. As far as possible the act of coughing must be restrained, so that a foreign body in the trachea or bronchus may not be disturbed, or, in case of a pin, forced into deeper regions.

If dyspnœa is present tracheotomy instruments should be ready, and it will be wise to sterilise the skin over the trachea with iodine and to infiltrate it with novocaine (2 per cent. solution), so that there may be no delay in opening the windpipe if urgent symptoms suddenly declare themselves.

If ordinary indirect examination with the laryngoscope shows the foreign body to be in the lower pharynx or larynx it will be unwise to attempt its removal except in the recumbent position and by the direct method. Otherwise, it may slip from the grasp of the forceps and fall to a deeper and possibly less accessible position.

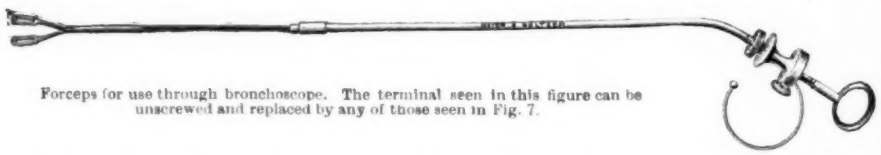
Under no circumstances would the writer advise inversion of the patient and slapping him on the back in the hope that the foreign body will be dislodged and coughed out. This treatment has been adopted in a few cases with success, but it is very risky, because the foreign body may impinge against, or become fixed in, the subglottic or glottic regions, and produce rapidly fatal asphyxia as a result of the combined obstruction and spasm of the cords.

It would be much wiser in such cases, if the symptoms are not urgent, to place one's tracheotomy instruments in order and prepare to make an immediate and direct examination of the lower air-passages or œsophagus.

Even in the absence of any symptoms, if it is clear from the history and result of different methods of examination that a foreign body is lodged in the air-passages or gullet, no delay should be permitted in the removal of the foreign body, because of the secondary and serious results which will sooner or later supervene.

As a rule, urgent dyspnœa demands immediate tracheotomy. If the foreign body is loose in the trachea it may be coughed out through the wound, but if such good fortune does not happen, the bronchoscope can be used through the tracheal opening, or the œsophagoscope passed in case the dyspnœa is produced by obstruction in the gullet. In any case, once the trachea is open the patient is practically safe from asphyxiation, and deliberate methods can be adopted without undue hurry or want of preparation.

FIG. 6.



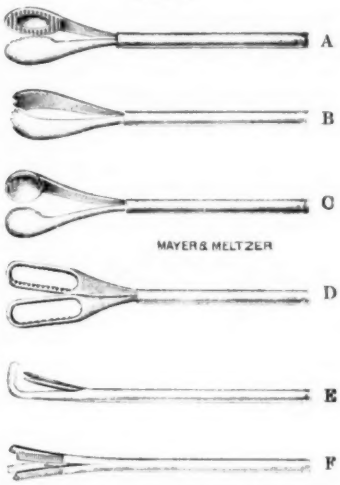
Forceps for use through bronchoscope. The terminal seen in this figure can be unscrewed and replaced by any of those seen in Fig. 7.

Every case of a swallowed or inhaled foreign body should be regarded in the nature of an emergency. Each hour that is unavoidably wasted may mean increased difficulty in extraction as a result of change in location or inflammatory reaction, and possibly serious deterioration in the patient's general condition. This is especially true of soft substances such as peas, corn-seeds, and such like, which rapidly swell, become soft, and are then difficult to remove.

At the present time it is nearly always possible to obtain the services of an expert endoscopist within a few hours. Failing this, it would be wiser to perform a low tracheotomy in all cases of a foreign body in the lower air-passages, because it removes a grave risk to the patient's life. If the wound is retained in an open position the foreign body may be coughed out; if not, it can be removed by the direct method.

The persistence of dyspnœa after the removal of a foreign body indicates the necessity for inserting an intubation tube, a suitable length of rubber tubing, or in extreme cases a tracheotomy. Our choice will largely depend on such circumstances as the skill and experience of the nurse in charge, the possibility of the surgeon being able to remain in the patient's home until the dyspnœa shows signs of abating, or his availability at a few moments' notice if urgent symptoms arise.

FIG. 7.



Œsophagus.

Unless it is so large as to cause dyspnœa, or so large (or small, *vide supra*) as to produce complete dysphagia, there is not the same urgency attending the presence of a foreign body in the gullet as in the lower air-passages. The tolerance of the œsophagus after the initial symptoms have passed off has been referred to already.

Nevertheless, once we are convinced from the history of the accident, by the symptoms, or by the result of radiography that there is a probability of a foreign body being lodged in the œsophagus we should proceed to verify the suspicion by looking into that region and setting all doubts at rest.

This can only be done by œsophagoscopy, and, with few exceptions, it is the only method for removal of the foreign body. The exceptions referred to are: (1) When the walls of the œsophagus have been severely injured by traumatism or ulceration; (2) the presence of cellulitis, emphysema, or abscess in the peri-œsophageal regions, showing that perforation has occurred; (3) more or less moribund condition of the patient from acute inflammation of the œsophagus, with dysphagia and "water hunger"; (4) in certain cases of aneurysm or serious cardiac or other vascular lesions. Even in certain of these states it may be possible by warmth, rest, and stimulants to improve the general condition of the patient so as to permit intervention by a skilled endoscopist. If not, external œsophagotomy or gastrostomy will be indicated.

Sometimes a large and tightly impacted foreign body may be cut into smaller fragments while *in situ* and the portions removed. Instruments have been devised for closing an open safety-pin and removing it without damaging the walls of the gullet, or by seizing it in the spring-hole and pushing it into the stomach, so that it turns round and can be safely withdrawn with the sharp end pointing downwards (C. Jackson's method).

RISKS OF ENDOSCOPY.

There can be no gainsaying that in unskilled or inexperienced hands the employment of the direct method is fraught with many risks, and fatalities have been recorded and unrecorded as a result of traumatism solely due to faulty manipulation. Even so, I doubt whether the sum total of such accidents would come near to that which has resulted from the blind methods hitherto so much in vogue.

As stated above, in practised hands the risks of endoscopy scarcely exist, and therefore the method should only be used by experts or by those who have served a term of apprenticeship with a master of the craft and who will subsequently have frequent opportunities for increasing their experience.

The last desideratum is of special importance because with lack of practice the eye soon loses its keenness and the hand its cunning. This is well exemplified in a letter written by a man who "had spent three months in a European clinic, studying, among other things, endoscopic technic. After coming home he made the serious error of not doing any tube work at all for over a year, had no trained assistant or nurse, and a numerically insufficient armamentarium which he brought home with him." He concludes his letter thus:—

"I have had only two cases, both œsophagoscopy, for coins near the cricoid. Both patients died on the table. I shall never do another œsophagoscopy, because I do not see a sufficient number of cases to do good work."[4]

This need of constant practice applies more particularly to tracheoscopy, bronchoscopy, and œsophagoscopy, because it should be comparatively easy and devoid of risk for any surgeon to examine the lower pharynx and larynx by the direct method. In other words, it may be said that the best work with the lowest mortality will be done by those who have sufficient endoscopic work to keep themselves in constant training. The "occasional operator" will be a source of danger to the community.

CONCLUSION.

In this short and incomplete communication I am only too conscious that the mere fringes of the subject have been dealt with and nothing has been said concerning detailed manipulations, niceties of technique, &c. These can only be taught by practical experience and they never can or will be mastered by the study of books or of monographs.

Furthermore, no mention has been made of the value of endoscopy in the treatment of disease in the lower air-passages and in the œsophagus. An enormous amount of excellent work has been done already, but the possibilities in this field seem almost limitless and the subject is full of fascinating problems.

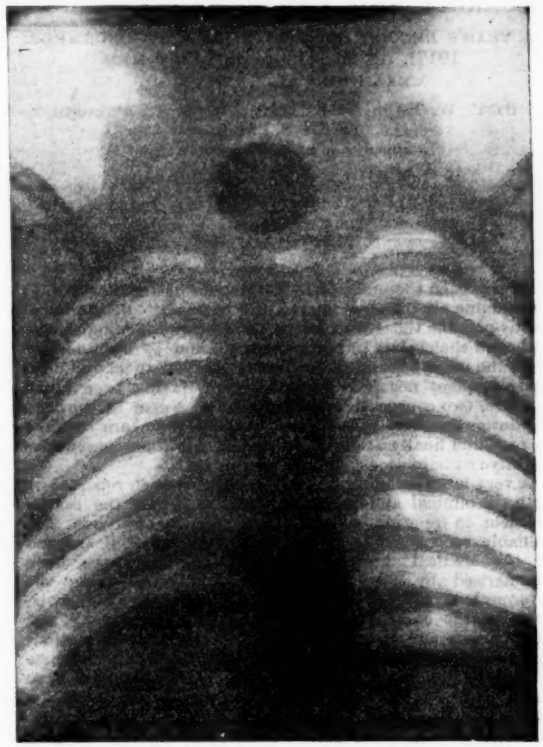
In THE LANCET of Nov. 7th, 1908, the writer contributed an article on this subject entitled "Direct Examination of the Larynx, Trachea, and Œsophagus by Brüning's Instrument." It concluded with the following paragraph which (if I may remove the words "a little" from the penultimate sentence) is as true to-day as when it was written, and may therefore bear repetition.

"To rescue a child or adult from imminent suffocation by means of a bloodless operation, and to restore him to his home in the course of a few hours, must be the joy of a lifetime given only to a few. But the delightful consciousness of possessing such a power may be shared by all those who will devote (a little) time, patience, and gentleness to mastering the details of the technique as outlined above. Then, and perhaps even before we might have expected it, the opportunity for the practical application of our knowledge may chance our way."

In the foregoing article the writer has had frequent occasion to refer to Dr. Chevalier Jackson's "Peroral Endoscopy and Laryngeal Surgery"—the most complete work on the subject in the English language. He is also indebted to monographs on the same subject from such well-known English endoscopists as Dr. D R. Paterson (Cardiff), Sir William Milligan (Manchester), Dr. William Hill (London), and Dr. Irwin Moore (London). To the last named we are indebted for a very reliable form of foreign body extraction forceps (*vide* THE LANCET, May 13th, 1916).

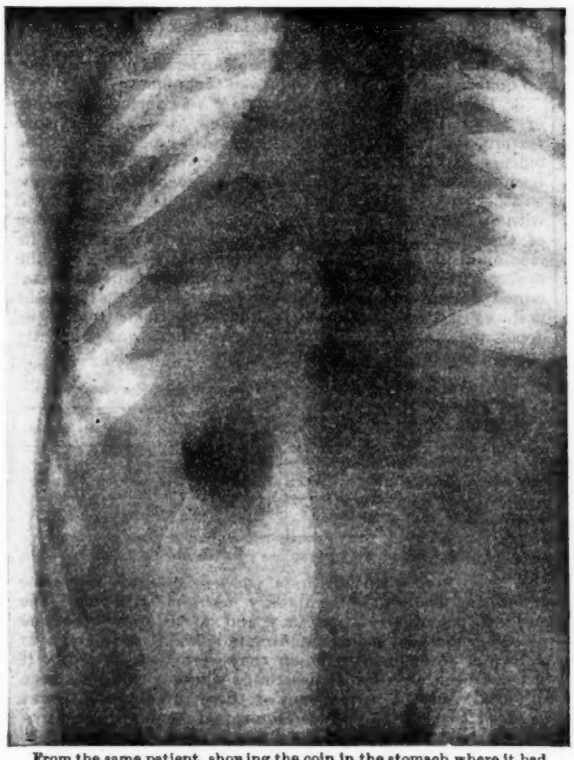
[4] From address by Dr. Chevalier Jackson, Internat. Congr. Med. London, 1913, Sectn. XV., Part 1.

FIG. 8.



Half-penny lodged in upper region of the gullet. (*Vide* text.)

FIG. 9.



From the same patient, showing the coin in the stomach where it had been pushed by the blind use of a bougie.

CARRIERS OF THE MENINGOCOCCUS:

A YEAR'S RECORD (DECEMBER, 1916, TO DECEMBER, 1917), OF 26,543 NON-CONTACT MEN EXAMINED AT GREENWICH.

BY P. W. BASSETT-SMITH, C.B., M.R.C.P. LOND., F.R.C.S. ENG.,
DEPUTY SURGEON-GENERAL, R.N.;
G. ROCHE LYNCH, M.B., B.S. LOND.,
TEMPORARY SURGEON, R.N.;
AND
S. MANGHAM, M.A.

IT has been the practice in the depôts of the Royal Navy to examine all men on joining the service to determine as far as possible those who are carriers of the meningococcus although themselves in perfect health, and to isolate these from the main bulk of the men until they are declared clear by subsequent negative examinations. Having been found positive, two consecutive negatives allow a man to continue his duties and mix with others, but two more are required to pass him finally as clear, making in all four consecutive negative examinations at weekly intervals.

A very large amount of work has already been reported on both the clinical and purely scientific aspect of the carrier problem in relation to the spread of the disease. The valuable recent works of the Local Government Board and of the Medical Research Committee, which have been summarised by Professor F. W. Andrewes,[1] bring the information required up to date. The present paper is, however, the complete record of a whole year's study, and the numbers are sufficiently large for reasonable deductions to be made. The observations were obtained from subjects of a large London naval depôt and the examinations have been carried out by a staff which has undergone no change during the period, thus observation errors have been reduced to a minimum. It is hoped, therefore, that the results may be of use to others who are interested in public health and epidemiological problems. At the start it would be well to place on record our definite belief that the detection and isolation of carriers of *any* strain of meningococcus from large bodies of men segregated together is not only justified but necessary, as the more fatal manifestation of this organism is by this means to a great extent prevented.

As it is at present impossible to determine the pathogenicity of any particular strain of meningococcus, it is necessary to regard all strains as potentially pathogenic, and the diagnostic characteristic must therefore be the agglutinability to a polyvalent antiserum which has been prepared from as many cerebro-spinal strains of the organism as possible—i.e., strains which have been isolated from cases of spotted fever, and only these strains. Whether these strains are sufficiently wide apart to form distinct species, as claimed by Gordon, or to be varieties of one species, as believed by Andrewes, is of less importance in practice, the essential factor being to recognise carriers as probable infecting agents.

Brief Description of Method Employed.

Number.—Non-contacts swabbed daily averaged 100–130, except Sundays.

Medium.—Trypsinised ox-heart (or, more recently, horse-flesh) agar, to which is added 5 per cent. of either pea- or wheat-germ extract, and 1·5 per cent. laked ox blood. This is for the Petri dishes, whilst for slopes the ox blood is omitted. The finished plate is clear and light pink in colour. The reaction is adjusted to plus 10 to phenolphthalein before the ox blood is added. The standardisation of the medium is performed as follows: For every 10 c.cm. of the hot agar 5 drops (= 0·13 c.cm.) of 0·2 per cent. solution of phenolphthalein in 50 per cent. alcohol is added, the liquid being placed in a flat-bottomed porcelain dish which is in contact with boiling water. This is titrated with N/10 caustic soda; the end-point is taken when the clear yellow disappears, and the faintest orange-pink is seen. It is then adjusted with normal acetic acid solution if necessary. The Petri dishes have a sterile filter-paper inside the cover to absorb the moisture, a valuable help in obtaining discrete colonies.

The swab is inoculated on to the plate which is well spread and incubated at 37° C. for 24 hours. Likely colonies are then picked off for examination by Gram for correct morphology and staining. Those which prove correct are inoculated on to slopes for the agglutination test. The typical meningococcus colony is round, well-defined, with slightly convex surface, transparent, very pale yellow by transmitted light, bluish white when viewed with a white wall as a background and milky white by reflected light. It must be borne in mind that other Gram-negative diplococci which by agglutination are shown not to be meningococci have exactly this appearance, so that the appearance of colony and morphology alone is not diagnostic.

After 24 hours, or if the organism has grown feebly, 48 hours, an emulsion is made with normal saline, it is heated to 60° C. for 30 minutes, and agglutinated with Flexner's serum at 1 : 200 dilution, with normal serum 1 : 50 as a control. These are heated at 55° C. for 18–24 hours and the results read off.

A few of the slopes fail to grow and must be returned as negative. The cause of this "no growth" is not known and the number varied with each batch of medium, but by strict application of the technique described for the preparation of the medium the number has been greatly reduced. It also does not follow that the organisms which fail to grow are necessarily meningococci. If the growth on any of the slopes fails to emulsify it may be safely assumed that the organism is not a meningococcus.

Results of Examinations.

Of the 26,543 non-contacts examined, 1250, or 4·70 per cent., were positive. The total number of cultures to which the agglutination test was applied was 3466, using Flexner's serum. Of these, 1250 gave positive results, or 36·07 per cent.

TABLE I.—*The Year's Results.*

—	No. swabbed.	Positives.	Percentage.
New entries	19,220	792	4·12
Drafts	5,046	375	7·43
Officers	1,278	60	4·69
Staff	999	23	2·30
Total	26,543	1250	4·70

This year's record has shown three important things:

1. The percentage of carriers has been higher—i.e., 4·7 per cent., against 2 per cent. last year (January to July, 1916, only).

2. The greater persistency of the carrier stage, partly due, no doubt, as also in (1), to improved technique.

3. The higher incidence of carriers was during the month of May. This was quite unexpected, but as the same feature was found among all classes—i.e., new entries, officers, and drafts—as shown in the curve, it could not have been accidental. Possibly it might be accounted for, as the weather in April, 1917, was very cold. This was associated with an increase of "catarrhs" and a wider dissemination of the meningococcus, which persisted and reached its maximum in May. The irregularity in the curve for the drafts is largely accounted for by the smaller numbers examined during June to September, but in the other months it shows that among the men who had been some time at the depôt under barrack conditions the incidence was distinctly higher than the incidence of those entering the depôt.

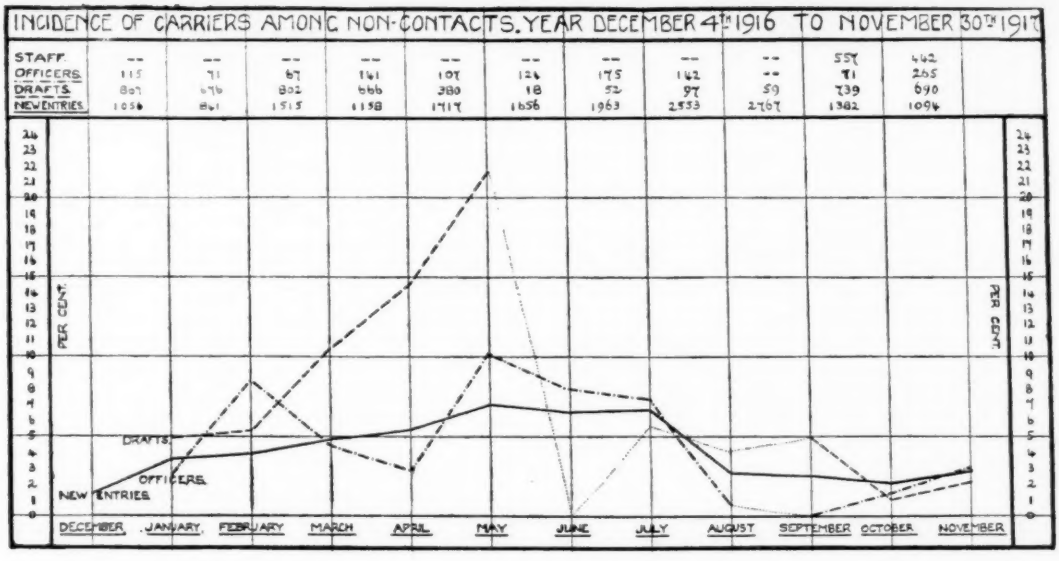
TABLE II.—*Frequency of Positives Per Carrier.*

Period.	1	2	3	4	5	6	7	8	9
Dec. 4th to May 22nd* ...	459	126	49	23	13	3	2	0	1
May 22nd to Nov. 29th† ...	470	72	19	9	1	3	0	0	0
The whole year	929	198	68	32	14	6	2	0	1

* Nos. 1 to 11,000. † Nos. 11,001 to 26,543.

A large proportion of these cases (see Table II.) come under the heading of temporary carriers with only one positive, but the intermittency and persistency of others were very marked, some extending in spite of treatment over periods of three months when they were lost sight of. It has not been possible to determine whether there has been any local cause of permanency of these infections. It may be noted that no case of cerebro-spinal meningitis occurred at this depôt after May, when the incidence began to fall. During the period under discussion in this paper there were 19 cases of cerebro-spinal fever.

[1] THE LANCET, Dec. 8th, 1917.


INCIDENCE OF CARRIERS AMONG NON-CONTACTS. YEAR DECEMBER 4TH 1916 TO NOVEMBER 30TH 1917
STAFF -- -- -- -- -- -- -- -- -- 557 462
OFFICERS 115 71 67 141 107 124 175 142 -- 71 265
DRAFTS 807 676 802 666 380 18 52 97 59 739 690
NEW ENTRIES 1056 861 1515 1158 1717 1656 1963 2533 2767 1382 1094
PER CENT.
DRAFTS.
OFFICERS.
NEW ENTRIES.
DECEMBER JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

Differentiation into the Four Gordon Types.

An attempt has been made to differentiate the naso-pharyngeal strains of meningococci into the four Gordon types, working with sera kindly supplied in the first few months by Lieutenant-Colonel Gordon, R.A.M.C., and afterwards by sera made by one of us (P. W. B.-S.), from standard cultures of the four types for which we were again indebted to Lieutenant-Colonel Gordon.

The interest of this investigation lies, firstly, in ascertaining how far the differentiation into the four types can be carried out with naso-pharyngeal strains; secondly, whether other types than these four exist; and thirdly, whether chronic carriers as a whole "breed true."

From 1250 carriers found among the 26,543 non-contacts, 936 examinations were made to determine the Gordon type.

During the first six months (December, 1916, to May, 1917. Nos. 1–11,000), 676 were positive to Flexner's serum. Only a proportion were tested with the Gordon type sera and the details of those agglutinating to more than one type and to none of the types are not available for comparison, consequently the more complete records obtained during the second period (May 22nd to Nov. 30th, Nos. 11,001–26,543) are shown separately. (Table III.)

TABLE III.

First period.		Second period.			
Type 1	167	Type 1	132	Types 1 and 2	11
,, 2	176	,, 2	218	,, 1 ,, 4	1
,, 3	2	,, 3	6	,, 2 ,, 4	8
,, 4	31	,, 4	25	,, 1, 2, and 4 ...	25
		Neg.*	132	,, 1, 2, 3, and 4...	2

* Negative to all Gordon's types.

First period: Flexner's serum, 676. Second period: Flexner's serum, 574.

The predominance of Type 2 is most marked, as has generally been found in naso-pharyngeal strains. With 132 of these emulsions there was no agglutination with any of Gordon's sera out of 574. It is possible that by further agglutination and absorption tests some of those giving mixed agglutination results might have been placed into a single group, but owing to stress of work this could not be done.

Of 107 carriers who had more than one positive, 51, or 47·66 per cent., showed a variation of the Gordon type in their subsequent swabbings, while 49, or 45·79 per cent., remained constant (7, or 6·55 per cent., were not examined with regard to Gordon type).

This change of type may perhaps be due to reinfection of carrier by carrier, as they were all isolated together, unless we recognise the mutability of the strains, for evidence of which further research is desirable. It may also be suggested with some justification that the type of carrier showing variation is dangerous at all times, as he appears to have the most suitable "soil" for the growth of the meningococcus in his naso-pharynx.

Conclusions.

1. For the year 1917 the carrier rate among healthy adult officers and men was about 4 per cent. (as compared with 2 per cent. for the same depôt, January to July, 1916).
2. The association of large bodies of men tends to favour the development of carriers, as shown by the greater number found among drafts than among new entries.
3. The importance of isolating known carriers as quickly as possible.
4. The highest incidence of carriers was in May, 1917, after which it fell, and no further cases were recorded up to the end of the period.
5. The great value of using a polyvalent agglutinating serum for the final diagnosis.
6. The relative preponderance among the naso-pharyngeal strains of Type 2 and the rarity of Type 3.
7. The occurrence of a considerable number of group agglutination reactions.

Note.—The curve showing carrier incidence for "staff" for the period October–November is practically identical with that for the "officers."

TYPHUS IN IRELAND.—The annual report of the Local Government Board for Ireland just issued (Cd. 8765, H.M. Stationery Office, price 4*d.*) states that the cases of typhus notified during the year ended March 31st, 1917, numbered 110, or practically the same as the previous year, when the number was 112. These figures, however, do not fully disclose the incidence of the disease, because, as the report adds, notification has not been universally adopted in Ireland, and further, because the initial cases in outbreaks of typhus are liable to escape recognition. In urban districts the disease was prevalent in Belfast, where 46 cases were notified; unfortunately the source from which the infection was conveyed was not ascertained. Twelve cases were reported as having occurred in Dublin, where the outbreak was attributed to overcrowding and insanitary conditions. In rural districts the largest outbreak (25 cases) occurred in Oughterard rural district, and this was also attributed to the same factors as in Dublin. Smaller outbreaks occurred in Tuam, Killadysert, and Enniscorthy rural districts. The steps taken to prevent the spread of the disease seem in general to have been more effective than the administrative action in regard to the grossly insanitary conditions and domestic overcrowding which admittedly were associated with its appearance.

ON THE RELATIVE ADVANTAGES AND DISADVANTAGES OF A STIFF LEG.

BY SIR ARBUTHNOT LANE, BART., M.S. LOND., F.R.C.S. ENG.,
CONSULTING SURGEON, GUY'S HOSPITAL, ETC.

IT is the general custom in excision of the knee-joint or in the case of removal of the lower end of the femur for the surgeon to do his utmost to secure bony union between the ends of the femur and tibia. Should he not succeed in effecting this result he considers that his operation has failed, and that he must either make an attempt by a further operation to obtain union or resort to amputation and an artificial limb.

During the war I have known of many legs being amputated on the ground that the surgeon considered that he might very likely be unable to secure union of the tibia to the femur and because he believed that a false joint might result. I would join issue with this practice, since I consider that non-union between the bones is frequently an advantage and not a detriment to the individual. Everything depends on the occupation and habits of the individual.

Illustrative Case.

I think I can best explain my views by describing an illustrative case.

An officer was shot through the femur, the lower end of which was shattered, necessitating the removal of about four inches of the lower end of this bone. The patient made an excellent recovery, but with a loose joint. He was unable to extend the leg, since the extensor muscle has been allowed to become attached to the lower end of the femur instead of having been sutured to the tibia, a procedure which would have increased the usefulness of the limb very materially.

Subsequently the relative advantages of an amputation and an artificial limb and of an attempt to secure union of the tibia to the femur by means of a bone graft were considered. At my request he went to Mr. Ernst, who made an apparatus for him which transmitted the large proportion of the weight of the body through the tuberosity of the ischium to the boot. He has now worn this instrument for more than four months. He is able to get about with ease and comfort, and can walk as far as six or seven miles, at the end of which distance he feels tired in his body rather than in his leg.

He is a highly intelligent man, and is well able to compare the relative advantages and disadvantages of a rigid leg with those of a leg which permits of easy flexion of the tibia upon the femur. He can do this all the more readily since he can make his leg a rigid rod or one permitting of flexion. He has no doubt in his own mind that the present condition of his limb is vastly preferable for him than an ankylosis of the femur to the tibia.

Relative Advantages and Disadvantages.

We might consider in the first instance the relative advantages of a rigid limb and of one allowing of movement in the situation of the knee-joint and those of an artificial leg for an amputation through the thigh.

If a man has to spend the greater part of the day in walking about, a stiff leg, assuming it is secure and painless, has the advantage (1) that he has not to wear an apparatus, and (2) that he is more secure on the damaged leg, since he can stand as firmly on it as on the sound leg. For the man who leads a life which is largely sedentary there is no question that the movable knee presents many advantages over the rigid leg.

One of the great assumptions of modern civilisation is that every man can bend his knees. A stiff leg means acute discomfort to its owner if he has to sit in public conveyances or in public places. People are constantly falling over the outstretched limb and wonder why it is not removed. It makes all places in the theatre, except the stalls or a seat on one side of the gangway, impossible or very difficult. With a stiff leg the individual must always sit on the edge of a chair, and as chairs are not designed to be so sat on he suffers the incidental discomfort of being very tired in the back. A stiff leg has the advantage of being available in an emergency at night, as in case of a fire, diarrhœa, &c., whereas the owner of a loose knee may have to hop or use a crutch.

Among a large proportion of the community none of the advantages of a stiff leg weigh against the fundamental advantages of being able to bend the knee.

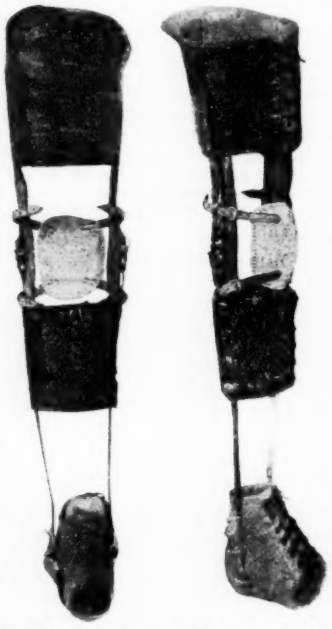
As regards the relative advantages of an artificial limb and a loose knee, there is the sentimental one of the possession of one's own leg. In a fair number of cases an artificial limb presents very great advantages, the possessor being able to lead quite an active and normal life within limits, but in the large majority of cases the patient with the artificial limb is worse off than the man with the loose joint as far as locomotion is concerned.

I would suggest that when excision of the knee-joint is performed in civil life for disease or in war-time as the result of a projectile the occupation, habits, and wishes of the patient should be taken into consideration, and that the surgeon should divest his mind of the idea that a stiff limb is the only result that he can hope for. We find as much difficulty in discarding our accepted teaching as in freeing ourselves from old-world superstition. Should the surgeon decide that a false joint is the best for his patient, enough bone should be removed to allow of the necessary range of flexion of the tibia upon the femur. The surfaces of the ends should be so shaped as to facilitate the formation of such a new joint, and extension and mobilisation should be carried out by such a splint as that devised by Captain Watkin Williams. This apparatus, which has been in use for some time in Queen Alexandra's Hospital, has afforded the maximum of benefit to the patients, since it ensures the greatest lengthening with perfect mobility of the joints of the injured limb.

The disabilities of a rigid leg may be greatly increased by damage sustained by the other leg. In the case of ankylosed knee-joints the attempts that have been made to construct a new joint on which the patient can walk without the use of any support have been in my experience very unsuccessful.

Description of Ambulatory Apparatus.

The following is a brief description of Ernst's ambulatory apparatus for use after excision of the knee with mobility at the joint.



Figures illustrating a back view of the apparatus and a three-quarter view showing the cup portion fitting the tuberosity.

This apparatus is designed to relieve all pressure from the knee-joint by taking the whole weight of the body from the tuberosity of the ischium and the gluteal muscles. A cast is taken in this region, and to this a leather is carefully blocked. Lateral steels extend from this thigh portion to beneath the foot. The apparatus is further attached to the leg by a broad calf piece and semi-sandal sole portion. The knee-joint is fitted with an automatic ring-catch locking device enabling the patient to bend the knee when sitting. In the erect position the knee-joint locks itself. A knee-cap gives added support when walking.

In fitting this appliance great care must be exercised that little or no weight is borne on the foot. An important feature is the lengthening arrangement at the thigh ensuring great accuracy in adjustment for relief of weight. Special attention is drawn to the design and fitting of the foot portion which enables a boot to be worn over the apparatus so that no external instrument is seen.

Cavendish-square, W.

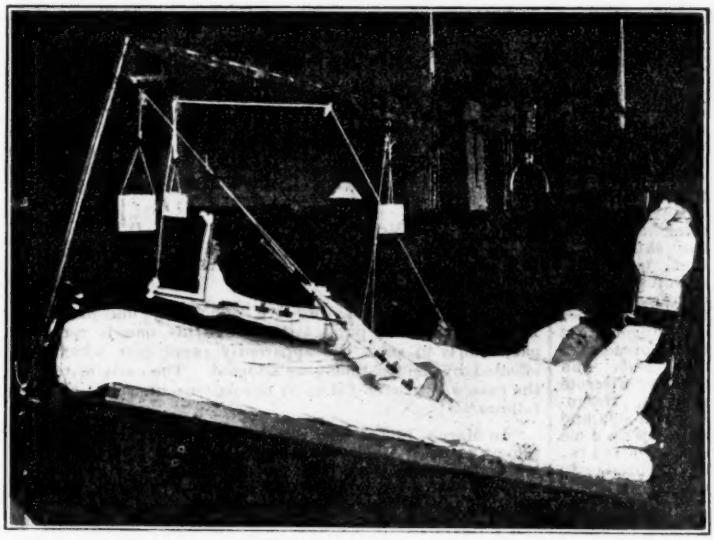
A NOTE ON SPLINTS.

BY P. L. WATKIN WILLIAMS, D.S.O., F.R.C.S. EDIN.,
TEMPORARY CAPTAIN, R.A.M.C.

A NOT infrequent sequel to the prolonged immobilisation of a limb for treatment of a fracture is rigidity of joints and muscles. This disability sometimes becomes in some degree permanent, and in most cases necessitates several weeks' treatment subsequent to recovery from the original injury. The avoidance of this complication is therefore desirable, if on no other grounds, on that of economy. The absolute fixation of the whole limb for injury to one part of it cannot be right in principle. Obviously the ideal to aim at is fixation of the injured part with sufficient freedom of movement of the uninjured regions to maintain their functional activity. The Thomas splint, for example, is excellent for immediate application in first-aid or for limited periods, as in transport, but if used for long periods produces a condition of rigidity and wasting which is deplorable, because avoidable. It must be within the experience of every surgeon working at home to see patients arrive with limbs in this condition which, owing to the exigencies of the service, have remained immovably fixed in the splint for periods of six or seven weeks. The principle of fixation of the injured tissues with mobility of the normal is not, of course, claimed as new; but its practical application, so far as I am aware, is not by any means general.

Complicated and expensive mechanisms are, in my view, unsuitable for the purpose. A splint for practical use should be cheap, simple in construction, and easily applied; and for efficiency fulfil the following conditions: (1) fix the injured tissues; (2) allow freedom to the uninjured; (3) afford ready access to wounds; (4) be comfortable. Not being able to find anything which met all these requirements I devised, and now beg to offer for criticism, an apparatus very far from perfect but which has been used for some weeks with comparatively satisfactory results. Structurally, the splint is the same for both limbs, and consists of a separate frame for each segment of the limb in which that segment is extended, the two frames of the splint being jointed together at the level of the limb-joint.

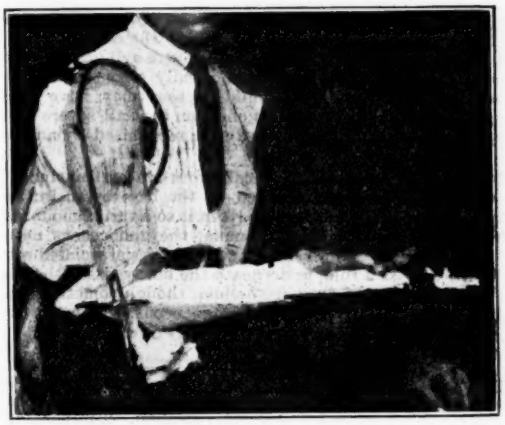
FIG. 2.



Upper limb.—The arm frame terminates above in a "ring," the anterior part of which is rigid, the axillary and posterior parts consisting of a padded rubber sling which forms the counter-pull to the extension bands tied to the lower end of the frame. Also the soft padded sling behind the shoulder is not uncomfortable to lie on when the patient is in bed. Fig. 1 sufficiently explains the rest of this splint and shows that the patient is not confined to bed. All movements of shoulder and elbow are permissible from the first, both active and passive with forearm fracture, and active at an early stage with fractures of the humerus.

Lower limb.—The thigh-frame is a shortened "Hodgen," the leg-frame, the lower two-thirds of a "Hodgen," hinged to the former at the knee-joint level. This joint is adjustable to any position, to suit different statures. Full range of knee movements can be obtained at once, passively, the patient himself doing this by raising and lowering the leg counter-weight, and except in "lower-third" fractures of femur and upper-third of tibia a small amount of active movement is possible, without causing any disturbance of the fragments.

FIG. 1.



It is hardly necessary to mention that a moderate amount of active movement is worth much of the passive variety, and this is a point specially aimed at in this method. Messrs. Down Bros. have made a finished product of each kind; but anyone possessing a vice, a hammer, a hack-saw, and some old Hodgen splints, can turn them out for himself, sufficient for the purpose of testing the method. The extension bands can be fixed either with Sinclair glue or strapping, the limb is slung in the frames in the usual way, any sling being easily and quickly removable for access to wounds.

In order to allow the patient to move himself about the bed it is convenient to have three separate counter-weights, as shown in Fig. 2. (1) Suspension of the thigh, about 10 lb. (2) Suspension of the leg, about 5 lb. (3) Extension of the thigh, 15 lb. to 25 lb. This is for femurs. For leg fractures extension is made by placing a rubber "accumulator" between the extension bands and the end of the splint, the heavy thigh extension being reduced to a weight sufficient to keep the limb at a comfortable elevation. In this way shortening of several inches in the femur can be reduced to nil in the course of a week or two, without discomfort or risk of additional wounds for transfixion. One is apt to think of splints mostly in connexion with fractures, but undoubtedly flesh wounds benefit as much by being placed in a position of rest, as bone wounds, and, particularly where the Carrel-Dakin treatment is used, this method of splinting will be found convenient and comfortable for all wounds of the lower limb, of any severity.

My cases have been under the constant observation of Sir Arbuthnot Lane, and he permits me to say that in his opinion "they are the most efficient splints he has seen. He has recommended their employment in other hospitals." I am indebted to Colonel O. L. Robinson, C.M.G., K.H.P., officer commanding Queen Alexandra's Military Hospital, Millbank, for permission to publish this note.

A CASE OF GONORRHŒAL KERATODERMIA.

BY H. M. M. WOODWARD, M.R.C.S., L.R.C.P. LOND.

Two cases of this rare condition have been recorded in this country—one by Sequeira and one by Graham Little and Douglas. Since, however, making the original notes of this case another instance, in a soldier, has been published in the *British Medical Journal* by Captain W. H. Brown and Captain A. M. Davidson. But from a perusal of the cases the one I am recording appears to be the most severe and prolonged of them all. The disease is undoubtedly very uncommon, though it is probable that milder cases may have been missed. When, however, the condition is at all severe it is very characteristic and will always be recognised by anyone who has seen it before.

It is characterised by a conical profusion of translucent, brown, horny masses surrounded at the base by an inflammatory areola. French authors liken it to a varied mountain range on a map. It is a toxæmia, the gonococcus never being found in the skin lesions, and is always associated with an arthritis. As a rule, underneath the horny tissue there is only found a mass of dead epithelium, though sometimes, as in the case below, one finds a streptococcus, which may be looked upon as an organism of secondary infection.

The following is an account of the present case.

The patient was admitted on May 6th, 1917, as a case of rheumatism, complaining of pain in both knee-joints and one ankle, all three joints being slightly swollen. Temperature 101·4° F., pulse 120. Salicylates had no effect on the condition. When I was asked to see the patient I found a certain amount of urethral discharge. There was no history of syphilis; and the Wassermann reaction was negative. He gave a history of having had acute gonorrhœa six years previously: 12 months before admission there was some discharge for a few days; it reappeared three weeks before admission. On examining the discharge I found the gonococcus.

FIG. 1.

Dorsal aspect of left hand, showing discrete patches resembling oyster shells.

FIG. 2.

Palmar aspect of left hand.

The arthritis now began to spread to other joints, particularly the wrist-joints and one shoulder. The temperature never came down to normal, but varied between 99° and 103°. About six weeks after admission the skin lesion first began to manifest itself, commencing between the toes and fingers. It then spread over the feet and fingers; discrete patches, resembling in size and appearance oyster shells, commenced to grow on the wrists, while small dark brown patches were seen on the lower part of the legs, on the elbow-joints, and subsequently three small places on the face. Coincident with this conical horny masses appeared on the terminal ends of the palmar surface of the fingers and plantar surface of the toes. Some of the nails dropped off. There was no discharge, the condition throughout maintaining its horny character. At the same time the wrists, fingers, and toes became much distorted, there was considerable pain in the joints and marked general wasting. The patient was scarcely able to move a muscle, and was unable to feed himself.

I commenced treatment by giving a gonococcal vaccine, starting with 3 millions and working up at weekly intervals to 120 millions. Very little improvement was shown, except that the patient felt better, and there was some diminution of pain. I decided therefore to give very small doses of gonococcal vaccine, never going above 4 millions, combining with it small doses of an autogenous vaccine made from the streptococcus. He had an inoculation about every five days.

FIG. 3.

Plantar surface of the feet, showing the conical horny masses.

From the commencement of the smaller doses a slow but steady improvement was shown. Pain soon entirely passed away; the temperature came gradually down to normal. During the last three months the patient has slowly begun to recover the use of his muscles. This improvement has continued until at the present time the patient is able to walk and the keratosis has almost gone. All the large horny masses have disappeared, and I think before very long the skin will become quite normal, though there will remain a certain amount of stiffness and distortion of the joints.

The case is, I think, remarkable for the wide area of distribution of the skin lesion, for its severity, and for its long duration. It may be regarded as a toxæmia associated with arthritis, the keratosis being due to the toxins of the gonococcus, as the gonococcus is never found in the skin. I am indebted to Dr. H. Burton for the photographs, which were taken a few weeks after improvement commenced.

A CASE OF ORIENTAL SORE.

BY CECIL R. C. LYSTER, M.R.C.S. ENG.,
OFFICER SUPERINTENDING ELECTRO THERAPEUTIC DEPARTMENT, QUEEN ALEXANDRA MILITARY HOSPITAL;
AND
W. H. McKINSTRY, M.D GLASG., D.P.H.,
TEMPORARY CAPTAIN, R.A.M.C.; PATHOLOGIST, QUEEN ALEXANDRA MILITARY HOSPITAL, MILLBANK.

CASES of Oriental sore are sufficiently uncommon in England to merit publication, and this one is recorded particularly to show the apparently rapid cure which was effected by the treatment we adopted. The early history of the case was written for us by the patient himself, and is as follows:—

"In March, 1917, I was sent to India and served at Dera Ismail Khan, N.W.F., from April 30th to July 18th, when I left for England. On my way home I had several attacks of slight fever. August 11th: Two days before reaching Marseilles a small pimple appeared where the lower sore now is. So far as I can remember I cut this while shaving, and at the same time I made a small cut where the upper sore is. I treated both these cuts with carbolised vaseline without effect. I think also that a little salt water got into them, as there was salt in some of the fresh-water tanks owing to bad weather. 13th: I applied some iodine without effect. 17th: On the day following upon my arrival in London both places appeared to have a little matter in them and I treated them with antiphlogistine to draw out the inflammation. This appeared to make them worse, although some of the matter seemed to be removed. 18th: I left for Sussex where I consulted a doctor. On his

advice I cleansed the sores three times daily with hydrogen peroxide and applied boric acid powder. These remedies were unsuccessful. 29th: I consulted a doctor at a military hospital and on his advice I applied an ointment of mercury. Sept. 4th: I endeavoured to clear up the upper sore with an application of strong iodine, but this only made it worse. The boils were bandaged since this day. 11th: I consulted you, and you know the subsequent history."

The patient, Major F., first attended Queen Alexandra Military Hospital on Sept. 11th, 1917, and was sent to the pathological laboratory for diagnosis.

On examination a large dry ulcerating swelling was seen on the lower jaw to the right of the middle line, and another in the submaxillary region on the same side. Their positions are well shown in the accompanying photograph. Both ulcers were circular and about one inch in diameter. Their borders were raised and their bases were covered with dry fissured crusts, beneath which a layer of thick pus could be seen. The raised edges were slightly indurated. The neighbouring lymphatic glands were not involved. The hairs on the bases and borders of the ulcers were easily, but not painlessly, extracted. Many of these hairs were examined for the presence of a fungus with negative results. A platinum loop was next inserted into the fissures near the borders of the ulcers and smears were made, stained with Leishman's stain, and examined microscopically. Numerous *Leishmania tropica*, the causative agent of Oriental sore, were at once seen. Some of them were intracellular, but the majority lay in clusters quite free outside the cells. The urine was found to be normal. Blood counts were made on two or three occasions, but at no time was there any excess of hyaline cells. The malaria parasite was also absent. On each occasion a differential blood count gave approximately the following figures: Polymorphonuclears, 63 per cent.; small lymphocytes, 20 per cent.; large lymphocytes, 13 per cent; hyalines, 4 per cent.

Having established the diagnosis the next step was to find a remedy to cure the condition in the shortest possible time—by no means an easy task considering the number of vaunted remedies at our disposal. For the sake of brevity and simplicity we tabulate the treatment we tried in chronological order. Sept. 11th: One ulcer dressed with a solution of salvarsan, 1 in 1000. The other ulcer dressed with $HgCl_2$ solution, 1 in 1000. 16th: Ultra-violet rays applied and ulcers dressed with flavine. 27th: An ointment of pyrogallic acid applied to both ulcers. Iodine ionisation commenced. Oct. 4th: Up to this time no appreciable change could be detected in either ulcer. Chlorine ionisation was therefore tried, 20 minutes for each application, together with a

hypochlorite dressing. In two days the crusts came away from the ulcers, leaving rather pale raw surfaces. This treatment was maintained until Oct. 25th, when the ulcers were practically healed, and subsequently until Nov. 1st. The size of the electrodes used was 1½ by 1½ inches on each ulcer, and the strength of current 20 milliamperes.

Among recent remedies which have been tried with more or less success for this condition mention may be made of radium, salvarsan, carbonic-acid snow, tartar emetic, permanganate of potash, and methylene blue. In our case neither salvarsan, perchloride of mercury, pyrogallic acid, ultra-violet rays, flavine, nor iodine ionisation appeared to make any impression on the sores. The benefit following on chlorine ionisation and hypochlorite dressings was so striking, however, that we hope others who have the opportunity will put these remedies to a further test. From the time that this treatment was begun until the ulcers were soundly healed was just three weeks.

We beg to thank Colonel O. L. Robinson, C.M.G., A.M.S., for permission to publish the case.

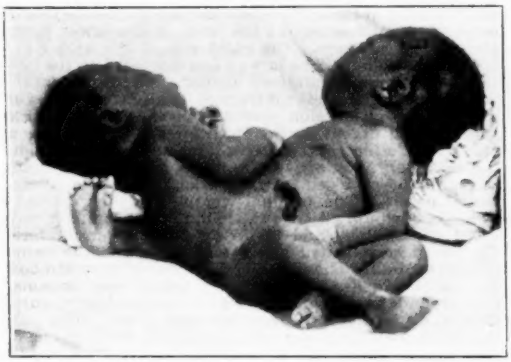
Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF ISCHIOPAGOUS TWINS.

BY W. SALMOND, M.B., C.M.GLASG.

THE parents to whom this monster was born are both natives of Natal. The mother is about 27 years of age and had previously given birth to two healthy children. She had no special difficulty in the present labour and no medical man was present. The living monster was seen when it was



seven days old, and as it did not seem likely to survive it was photographed. It died the next day. Both bodies were of the female sex and presented perfect vulvæ, but urine only escaped from one. There were also two anal orifices, but likewise fæces escaped from only one. Each mouth took food and the children cried independently. One child would sleep while the other remained awake. There were two hearts which did not beat synchronously, and the respiratory movements in each chest were independent. There was only one umbilical cord. There were normal movements of all the four arms and of the two legs shown in the foreground of the picture. The third, or fused, leg had nine toes. The evidence of movement was less apparent at the ankle and knee-joints and absent at the hip, although there was a distinct articulation to the single pelvis. An attempt was made to secure the skeleton, which up to date has not been successful.

Ladysmith, Natal.

THE TREATMENT IN THE FIELD OF UNCONTROLLABLE HÆMORRHAGE IN GUNSHOT WOUNDS.

BY J. CAMPBELL,
CAPTAIN, R.A.M.C. (S.R.).

OPEN gunshot wounds of the neck involving the large vessels are usually immediately fatal on the battlefield; but a number of cases do come under the care of medical officers, yet even then they are almost universally fatal from blood loss, either immediately or during transit to the field ambulance. This unfortunate end in the latter cases is due to inability to control the hæmorrhage by the customary mechanical methods at hand; packing is useless, a tourniquet to be effective compresses and throws out of action other structures of vital importance, and digital

compression, though devoid of these risks, cannot be maintained long enough to allow of the patient reaching the nearest surgical station. These facts apply equally to wounds of the axilla and root of the thigh.

One method, however, seems to offer some practical way out of the difficulty and can be readily made use of—namely, the closure of the wound in the skin (and, if possible, in the deep fascia also) either by a continuous tightly-drawn suture or else by Spencer Wells or Kocher's forceps. By this means all external bleeding is controlled. Blood extravasates locally, forming a hæmatoma, and produces considerable tension in the tissues, and so checks further hæmorrhage. In other words, the open wound of the vessel becomes converted into a closed one with the formation of an arterial hæmatoma. This then allows of sufficient time for the patient to be rapidly transported to the nearest surgical unit without death resulting from extreme blood loss.

The advantage of the method is amply well shown by the following case:—

Private X. was admitted to a casualty clearing station about three hours after being hit in the neck by a shell fragment. His clothes were drenched with blood from head to foot. He was semi-comatose and under the influence of morphia. He was markedly blanched. He showed drooping of the left face and on stimulation never moved the left arm. Two pairs of Spencer Wells forceps completely occluded an entry wound in the right side of the neck, over the line of the common carotid artery at the level of the lower border of the thyroid cartilage. The right side of the neck was very tense and swollen. The larynx was displaced to the left and there was some respiratory stridor. The right pupil was widely dilated, the left contracted. The case was obviously a serious vascular lesion—probably of the common carotid—and required urgent surgical interference. Under a general anæsthetic, a temporary ligature was applied to the common carotid artery, just above the sterno-clavicular junction, a fair amount of blood extravasation being met along the fascial planes. The original wound was then excised and widely opened up. A tear was found in the common carotid, about ¾ inch long and involving half its circumference. The vessel was ligated above and below and the damaged portion excised. The missile was removed from the body of the vertebra behind the pharynx, which was undamaged. The wound was "bipped" and incompletely sutured. Finally, an intravenous injection was given. The patient died 36 hours later, never having regained consciousness.

At the necropsy the wound was in excellent condition and the internal carotid patent. In the brain the convolutions of the right hemisphere were flattened, especially in the middle and the area supplied by the middle cerebral artery was obviously pale and softened. There was a small embolus lying in the commencement of the middle cerebral artery and a thrombus extended along the vessel and its branches for some distance. Death was due to cerebral embolism with œdema and compression.

Though this case terminated fatally I think that it illustrates the advantage that might be gained by closing the skin wound in cases which would otherwise end in death from uncontrollable hæmorrhage. Pierre Duval, nearly two years ago, recorded a number of cases of open wounds of the chest which would have ended in death from hæmorrhage had the wound not been closed, and so allowed of the raising of intrapleural pressure with consequent occlusion of the pulmonary vessels. Any method which offers an indication for avoiding the almost invariably fatal issue in lesions of the vessels in the above-mentioned situations merits a trial; hence my reasons for writing this note.

A CASE OF SPONTANEOUS CURE OF CATARACT.

BY C. HIGGENS, F.R.C.S. ENG.

Patient, aged 73, consulted me on Jan. 21st, 1918. He gave the following history. Many years ago he had repeated attacks of iritis in both eyes, of which, however, no marks remained. About 40 years ago he developed cataract in both eyes, the right being the worst. The right eye was operated on by Mr. Bader with good result. He had been for years nearly blind from cataract in the left eye, and assured me he could only tell light from dark with it. His right eye had central pupil, slight capsular opacities, vision 6/18 with + 13, J. 2 with + 16. In the left eye, which he believed to have cataract, there was a deep anterior chamber, tremulous iris, small central pupil, but no sign of cataract. The lens was obviously dislocated and floated across the pupillary area on movements of the globe. To his astonishment I found he had vision 6/12, with $+\frac{1{\cdot}50\ \text{cvl.}}{12\ \text{spn.}}$; J. 4 with $+\frac{1{\cdot}50\ \text{cvl.}}{15\ \text{spn.}}$ I had great difficulty in making him believe that I was not letting him see with the right eye, and he would not be satisfied till I took the opaque disc out of the right side of the frame and allowed him to hold down the lid with his fingers. Eventually he left highly pleased with the result of his visit. I could get no history of any injury to the eye, but after a good deal of questioning I found that about ten years ago he had a severe fall on the back of his head, and I am inclined to believe that was the cause of the dislocation. His history of repeated attacks of iritis and the early age at which he developed cataract point to specific origin.

Remarks.—What capital the class of practitioners represented by Count Wieser would have made out of such a case—cataract cured by squirting with a syphon of soda-water or some such non-operative procedure. I have seen one other case of spontaneous cure of cataract. It was that of a man who had lived in "the Bush" in Australia and almost entirely by himself. He found that the sight of one eye was defective, and that it gradually got worse until he could only tell light from dark. Later the sight began to improve again and continued to do so. When he came to me he had very fairly good vision, but I have forgotten the man's name, and consequently cannot look up my notes. He had a central moveable pupil, and there was a good deal of opaque capsule, but no other evidence of the lens. The patient had never consulted anyone about his eye and never had an injury to it. So I came to the conclusion that it was a case of cataract, where, for some reason or other, the capsule had given way spontaneously and the lens matter been absorbed.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTIONS OF NEUROLOGY, SURGERY, AND SUB-SECTION OF ORTHOPÆDICS, WITH THE WAR OFFICE COMMITTEE FOR THE STUDY OF TETANUS.

Muscle Contracture Following Injury.

A conjoint meeting of these sections with the War Office Committee for the Study of Tetanus was held on Feb. 14th, Sir ANTHONY A. BOWLBY, K.C.M.G., K.C.V.O., President of the Section of Surgery, being in the chair, to consider the subject of "Muscle Contracture Following Injury."

Surgeon-General Sir DAVID BRUCE, C.B., A.M.S., said that when the War Office Committee for the Study of Tetanus had asked surgeons whether they could mention any case of persistent contracture occurring after injury under civilian conditions, and, if so, to state the percentage of cases in which such a phenomenon occurred, answers were received from 70 to 80 surgeons, and in only one instance had such a case been seen. Sir David Bruce asked why cases of contracture were almost wholly restricted to war wounds. What was the cause of localised contracture of muscles in a wounded limb?

Captain WILFRED HARRIS, R.A.M.C. (T.), demonstrated five cases of contracture. The first occurred in a case of ulnar nerve palsy; he had seen the same thing in civil life. The second was a case of incomplete contracture, which he regarded as chronic hysteroid spasm. The third was a case of contracture following ulnar nerve injury, coupled with hysterical weakness of the forearm muscles. The fourth was that of a man who had been wounded twice in the left parotid region. Clonic contraction of facial muscles came on after the second wound, and this Captain Harris regarded as being due to mechanical irritation of the facial nerve by scar tissue. In the last case a facial tic appeared after the metal had been removed from the wound. He considered these to be cases of tonic and clonic contraction following wounds, but thought that they had nothing to do with tetanus.

Major JOCELYN SWAN, R.A.M.C., showed a case which he believed to be chronic tetanus. Five days after the first injection of antitetanic serum was given spasm had disappeared, and since then the contracture had much improved.

Captain F. GOLLA, R.A.M.C.(T.), said that there were two types of contracture: (1) That of nervous origin. A constant contracture, persisting without intermission, was of cerebral or spinal origin. If cerebral, light anæsthesia would produce relaxation; if spinal, the anæsthesia must be pushed before relaxation occurred. (2) Contracture of myogenic origin might occur as a secondary symptom to contracture of nervous origin. Many cases of nervous contracture were functional, and in this type contracture could be reduced by hypnosis, &c. He asked whether we were justified in assuming that contracture which persisted during anæsthesia was due to local tetanus. It was difficult to decide on what grounds a diagnosis of local tetanus could be made. Deep reflexes were often noticed to be increased among those in the front line under shell fire. Local twitching was as often absent as not in tetanus. Ascending anaerobic infection in wounds was not necessarily tetanus.

Dr. F. RANSOM said that local tetanus was a central phenomenon, and could be produced by injecting toxin into the spinal cord. The muscles were stiff and at first nothing else happened; there was no sign of increased reflexes for some time. Later, over-excitability was superimposed upon this contraction of the muscles.

Sir KENNETH GOADBY said that the outstanding difference between industrial and war wounds was the presence of anaerobic infection. He thought that cases of painful clonic spasm should be regarded as tetanus unless proved otherwise. He described a case of contracture following typical tetanus, which was cured by antitetanic serum. The symptoms of local tetanus were: (1) Twitching of wounded muscles and tonic spasm, which was painful and followed voluntary movements elsewhere; (2) deep reflex excitability; and (3) pain, which always preceded the tonic spasm in his cases; twitching—local or general—also nearly always preceded the spasm. He considered that all cases of contracture should be regarded as potential chronic local tetanus, and should be treated by antitoxic serum.

Major F. W. ANDREWES, R.A.M.C.(T.), said that the presence of tetanus bacilli in a wound was not diagnostic, as they were often found. He had seen 40–50 cases of tetanus, 12 being cases of local tetanus. He had arrived at the conclusion that the muscular spasm might be tonic or clonic, but was most often a combination of the two, and he thought the presence of both was distinctive of local tetanus, especially if deep reflexes were exaggerated. Cases in which tonic spasm was prominent did not react well to antitoxin. A combination of local rigidity and painful tonic spasm was diagnostic. Subsidence of clonic spasm after the administration of antitoxin was a help to diagnosis. Where the patient was very susceptible to horse serum small amounts of very highly concentrated serum were used.

Dr. F. E. BATTEN said that he had seen cases of contracture after injury in civil life and thought that neurologists and those who were connected with insurance companies would probably have a similar experience.

Captain HARRIS said that a diagnosis could not be made from any special group of symptoms, but the whole clinical picture must be considered. The most prominent symptoms were tonic and clonic spasm associated with pain, especially pain of such a degree and character as could not be caused by the spasm. Too much stress should not be laid on the disappearance of symptoms after treatment, but pain out of proportion to the amount of spasm was the most diagnostic.

Major R. C. ELMSLIE said that in orthopædic practice tonic spasm was common, and usually followed injury combined with shock; in many cases there was no abrasion of the skin. The spasm usually reacted to treatment for functional deformity, such as suggestion and electrical stimulation, and in most cases resulted in a cure. The spasm was usually tonic in character.

Dr. H. CAMPBELL THOMSON said that he had frequently met with cases of contracture following injury. Care was needed to diagnose them from functional diseases of the nervous system.

Captain C. M. HINDS HOWELL agreed that contracture following injury was comparatively common.

Sir ANTHONY BOWLBY spoke of his experiences in France. He had seen many cases of contracture among soldiers in hospital for shell shock, and such cases yielded to suggestion, hypnosis, and quiet. He had also seen some cases of local tetanus. If the local spasm supervened soon after the injury he regarded it as functional, but if later—several weeks or even months—it was probably tetanus.

SECTION OF OTOLOGY.

The Influence of Abnormalities and Diseases of the Nose on the Ear.

An ordinary meeting of this section was held on Feb. 15th, Dr. H. J. BANKS DAVIS, the President, being in the chair.

Dr. WILLIAM HILL opened a discussion on the Influence of Abnormalities and Diseases of the Nose on the Ear. There were, he said, two divergent schools of thought: the one contended that nasal disease was not an important factor in middle-ear disease, the other was convinced of the frequent association of the two. The latter school could be again divided into those who believed that nasal obstruction *per se* caused Eustachian congestion and obstructive tumefaction as the result of negative pressure, though recognising that nasal catarrhal diseases caused Eustachian stenosis and certain middle-ear changes resulting in deafness. Those in the other subdivision rejected the negative pressure hypothesis, but accepted the catarrhal theory. Lack had declared that nasal obstruction *per se* was never a cause of deafness or of ear disease, his general reason being the large number of cases met with in which partial or complete nasal obstruction existed, and had existed for years, with normal hearing and normal ears. Dr. Hill enumerated the varieties of the conditions in which this contention was supported. The catarrhalist group, on the other hand, while fully recognising that many cases of long-standing nasal catarrh, with or without obstruction, did not become deaf, yet urged that in a definite proportion of cases the two conditions were associated, and with sufficient frequency to warrant the conclusion that it was a case of cause and effect. The catarrhal process was held to spread by continuity from the nose to the tubes, and that an individual case of chronic nasal catarrh must be regarded as a potential, or at least a possible, future ear case, and the necessary measures dictated by that view taken. The otologists of the early Victorian era never mentioned nasal disease in their books and papers on otology.

Sir STCLAIR THOMSON said he had been struck with the large number of sanatorium patients who had nasal obstruction without nasal disease. Hence this led him to dismiss the negative pressure theory. Deafness was seldom noted in cases of congenital atresia of the posterior choanæ. Catarrhal processes in the nose did not necessarily show a tendency to extend to the ear, but catarrh certainly was apt to attack both owing to the patient being a catarrhal subject. Individual predisposition was an important factor.

Dr. ALBERT GRAY agreed with the last speaker. Why should the individuals in one family manifest a certain result on the hearing, while others, with far more marked nasal obstruction, showed no deafness? The improvement of the nasal passages, such as by cauterising the turbinate bodies, in the hope of improving the hearing, did not yield the results expected in a general way. Some patients showed a mixed condition of catarrh and oto-sclerosis, but it was not wise to expect marked results from operating on the nose because, once having stimulated the particular cells into activity, it was not so easy to stop it. He objected to operations for pure oto-sclerosis.

Mr. C. HEATH said he regarded catarrh as a constitutional affection rather than as one due to local irritation or to obstruction in the nose. It might affect either the ear or the nose, or both. In one case, a mouth-breather, with double otorrhœa, benefit ensued from total removal of the inferior turbinals.

Major P. WATSON-WILLIAMS, R.A.M.C.(T.), declared himself to be more a catarrhalist than ever now, and he completely rejected the negative pressure hypothesis. He believed that septal deflections and adenoids never caused deafness from negative pressure, nor from direct compression of the Eustachian tubes, but their influence in either case depended on the associated catarrhal infection. Often an obstruction in the nose and a septal deflection had led to an added infection of nasal passages or sinuses. He referred to the group of cases in which there was severe pain referred to the ear from sphenoidal sinus disease, and quoted some instances. He believed that most cases of aural infection—excluding those of infection of meatus, new growths, syphilis, and tubercle

—were catarrhal, and that in a large proportion the source of the infection was the nose or the naso-pharynx.

Professor URBAN PRITCHARD said the improvement in hearing after the removal of Eustachian obstruction was often immediate and remarkable.

Mr. MARK HOVELL said that if double Eustachian obstruction was present, it was well to attend to the nose, and in some cases the removal of a spur therefrom was beneficial; that depended on the size of the spur. Many patients breathed comfortably through what appeared to be an obstructed nostril; air passed freely through a tortuous passage.

Major DUNDAS GRANT deprecated any division of practitioners into separate camps according to the views they expressed. Dr. Law once told the Vienna otologists that they would have been more successful if they had been better rhinologists, and that statement was justified. A nose which appeared to be thoroughly obstructed might not be so in reality. However wide a nostril might be, it was not always exempt from catarrhal conditions, and infection might extend via the Eustachian tube.

Dr. P. G. GOLDSMITH urged the importance, before operating on the nose, of carefully recording the degree of hearing present.

Mr. W. STUART-LOW thought the cause of most of the conditions under discussion was sepsis, and there should be a more systematic examination of nose discharges by the pathologist. In cases of deafness, if the patient had a deviated septum it was removed because such a patient had repeated septic catarrhal infections.

Dr. W. H. KELSON said the cases of deafness whose nose should be operated upon were those who had repeated colds in the head and whose deafness was increased during such cold; those who were improved by inflation; and those who improved by the application of alkaline lotion, preferably snuffed up the nostrils.

Mr. HERBERT TILLEY said his view still was that obstruction of the nose *per se* had no influence in the production of those forms of deafness usually characterised as of middle-ear origin except in so far as it acted indirectly in maintaining or promoting catarrhal conditions which were probably of microbic nature, and which he believed to be the true cause of the middle-ear infections that led to chronic forms of deafness.

Dr. J. DONELAN agreed that none of the obstructions spoken of had any effect apart from accompanying sepsis.

Dr. HILL replied in detail.

RÖNTGEN SOCIETY.

"Static Currents" obtained from an Induction Coil.—New Mobile Snook Apparatus.

A MEETING of this society was held on Feb. 5th, Captain G. W. C. Kaye being in the chair.

Dr. G. B. BATTEN read a paper on a simple means of obtaining "Static Currents" from an Induction Coil. The method consisted in connecting one secondary pole of the coil to earth, whilst the other was connected through a series spark gap, oscilloscope tube, and a series condenser to the patient, who was placed on an insulated stand. The function of the condenser appeared to be that of a high resistance. The advantages of the apparatus were twofold. In the first place, it overcame the troubles due to a wet climate, from which the static machine always suffered, and, secondly, it afforded an inexpensive means, to those already possessing an induction coil, of obtaining currents similar to those produced by static machines.

Mr. E. E. BURNSIDE read a paper describing a new Mobile Snook Apparatus. This was constructed on the same principle as the larger pattern hitherto in use, but was made in a more compact form by reducing the maximum spark gap to 7 inches.

Mr. BURNSIDE also showed a small Transformer constructed for employing the continuous current main supply to heat the spiral of the Coolidge tube. A small rotary converter changed the direct current into alternating current, which was stepped down to 12 volts by the static transformer. The secondary was well insulated from the rest of the apparatus and regulation of the filament current was obtained by a variable choke-coil in the primary circuit of the transformer.

Reviews and Notices of Books.

1. *The History and Practice of Psychanalysis.* By POUL BJERRE, M.D. Authorised translation by ELIZABETH N. BARROW. Boston: Richard G. Badger. 1917. Pp. 294. Price $3 net.
2. *Dream Psychology.* By MAURICE NICOLL, B.A., M.B. Camb., Captain (temp.), R.A.M.C. London: Henry Frowde and Hodder and Stoughton. 1917. Pp. 194. Price 6*s.* net.

1. THERE can be no doubt, if we are to judge by analogous historical instances in the realm of thought, that what in the doctrines of Freud is not shaken by criticism will remain and fructify. It would be mere pedantry to deny the immense impulse given to psychological investigation by his labours, and already many of the basic ideas on which he founded his method are passing into the commonplaces of psychology. To condemn unsparingly the exaggerations of the "wild psycho-analyst" may be justifiable, but it is simply silly to ignore the whole movement in an ostrich-like fashion as if it thereby ceased to exist. The fact is that clinical experience is proving the value of the method daily, while it is emphasising the desirability of a sane and temperate presentation of the advantages and disadvantages, the truths and the errors which are alternately shouted at the bewildered physician by the advocates and the critics of psycho-analysis. Such a presentation is to be found in the book under notice. Dr. Bjerre is at pains to put Freud's doctrines in place in a scheme of unification of the methods of psycho-therapy, and to show how much confusion has been caused by failure to distinguish between psycho-analysis as a method and as a therapeutic agency. Some at least of this confusion is due to its founder's resolute but mistaken efforts to rule out suggestion as a factor in the results obtained by psycho-analysis. More harm has been done to the development of the movement by Freud's own "infelicitous tendency to drive one-sidedness to absurdity," according to Dr. Bjerre, than all criticisms coming from without and all inner scientific differences. By desperate forcing of everything into an inelastic theoretical impasse constituted by the idea of all pervading sexuality the true-blue psycho-analyst is simply causing the movement to work on its own annihilation. It is therefore with the greater pleasure and profit that the learner will peruse such an eminently reasonable exposition of what, and what not, to expect from the practice of psycho-analysis as is to be found in Dr. Bjerre's book, which we commend to the notice of all who are interested in the subject.

2. Captain Nicoll's slender volume on Dream Psychology supplies what has hitherto been awanting in modern psychological literature—viz., a concise and scientific yet not too technical exposition of the place assigned to dreams by the various schools of thought deriving their origin, if not their separate development, from Professor Freud, of Vienna. At least they are in agreement in assigning supreme importance to the dream in the investigation of abnormal states of mind; a conflict in interpretation, if inevitable, cannot by itself invalidate the contention that the dream is the product of subconscious or unconscious mental activity and that its phenomena are as deserving of clinical study as any other expressions of the individual psyche. Following the teaching of Jung, to whom the author acknowledges his indebtedness, Captain Nicoll gives, in a succession of lucidly written chapters, a consecutive account of the psychology of the dream, its mechanism and interpretation, its forms and varieties, the psychological processes of whose action it furnishes evidence, its clues to unconscious motives and interests; and at the same time he supplies brief illustrative instances of actual dreams and appends analyses of their significance for the individuals concerned. Incidentally, he reveals in what respects the Zürich school has moved away from the teaching of Freud. There is not a little said, also, on more general lines on the problem of the neuropath and on his treatment, while the bearing of the dreams of the normal individual on his own adjustment of the relations between his waking and his unconscious life is similarly touched on here and there. The book is a thoughtful and well-balanced study in small compass of how to envisage the dreams of both the normal and the abnormal individual, and forms a useful introduction to more pretentious works bearing on the same theme.

Acute Poliomyelitis. By GEORGE DRAPER, M.D., Associate Attending Physician, Presbyterian Hospital, New York City. London: William Heinemann. 1917. Pp. 149. Price 7*s.* 6*d.*

Dr. Draper is already well known to students of poliomyelitis as the author in conjunction with F. W. Peabody and A. R. Dochez of an excellent monograph on the subject published in 1912. In his foreword to the present book Dr. Simon Flexner points out the exceptional opportunities for studying poliomyelitis enjoyed by the author in his charge of patients at the Rockefeller Hospital during the past two years when epidemics of unprecedented severity have swept over the Eastern States of America, opportunities of which he has known how to avail himself. The book is divided into 11 chapters. The first gives a short account of the history of the disease, the following chapters dealing with the etiology, epidemiology, experimental work and pathology; each chapter gives a concise digest of our present knowledge in regard to poliomyelitis. In the chapter on "Classification of Types of Poliomyelitis" the author criticises the classification of Wickman and suggests one based on the onset and course of symptoms—dividing them into three groups, which he designates "dromedary," "straggling," and "sudden onset" groups, illustrating each group by a series of cases. The practical advantages of this classification are not quite apparent, although the scheme as detailed in the sixth chapter has a certain attractiveness of its own. The eleventh chapter deals fully with the serum treatment of the disease and gives the figures published by various authors showing the percentage of recoveries. A series of cases treated by the serum method is also given. The value of this line of treatment is left open. Dr. Draper's little book may be taken as an able digest of our present knowledge of poliomyelitis and of its treatment in the acute stage.

JOURNALS.

Archives de Médecine et Pharmacie Navales.—In the December number of this journal Fleet-Surgeon Hesnard, of the French Navy, tells of his success with X rays in treating old wounds involving nerve-trunks which have become sclerosed by the deposit of fibrous tissue around or within them. He is the director of a neurological clinic near Bizerta in Tunis, and has been developing this method for the last two or three years. His photographs show the disappearance of contractures and the better trophic condition of limbs after treatment. His paper can be consulted for full details of the apparatus and currents used. He gives a sitting for 25 minutes every six to 10 days, and claims 80 per cent. of recoveries after 10 to 30 sittings The lesion must be superficial to the deep aponeurosis, the nerve must not be completely divided, nor must it be involved in a callus, nor hidden behind a foreign body. The best results are obtained in cases where the nerve is compressed in a superficial cicatrix, and particularly if the injury is recent, though he gets good results even after a year. He tells us that exposure to X rays softens the scar-tissue, encouraging cell growth, and removing the firmer fibres; in this now softened matrix the nerve fibres recover themselves, and even neuromata become absorbed. Erythema of the skin should be avoided, though he has never found it do harm. Sensation is first affected, pain if present disappears, whereas if there is no pain beforehand paræsthesia and a little pain may develop, then the muscles have their nutrition and motility improved. The electrical reactions usually are the last to reappear. The photographs which illustrate the paper suggest that Fleet-Surgeon Hesnard has done a great deal for some very advanced cases.—Fleet-Surgeon Cazamian, of the French Navy, completes his account of a case of alkaptonuria which only showed darkening of urine after sodic salicylate was administered. Alkaptonuria seems to be very rare in France, as only six cases appear to be on record, two in this paper and four quoted from the literature.

Maternity and Child Welfare. Vol. II., No. 1. January. 1918. Price 6*d.* net.—In this issue the editorial remarks on the subject of the birth-rate are interesting The relation of national birth-rates to international politics is a wide subject, but it is one which might with advantage be studied by the intelligent public. In England and the United States the entry of women into politics while the war is raging is likely to encourage such study. The article on Twilight Sleep by Dr. Margaret Vivian bears on a different aspect of the same subject. Dr. Jessie White's third article on Montessori Reforms is fascinating and the reverse method as described in Annotations is a lurid but unfortunately most life-like picture of the American child quoted from the *Mother's Magazine* (Illinois) with the remark added by the annotator, "such goings on are not indeed confined to the other side of the Atlantic." Dr. Helen Webb's Talk to Mothers on the Character-training of Small Children is excellent, and there are also interesting articles on Atmospheric Pollution and Infant Mortality, by Dr. W. A. Brend, and on the Report of the Medical Research Committee (National Insurance Act) on the Mortality of Births, Infancy, and Childhood by Dr. Sidney Davies.

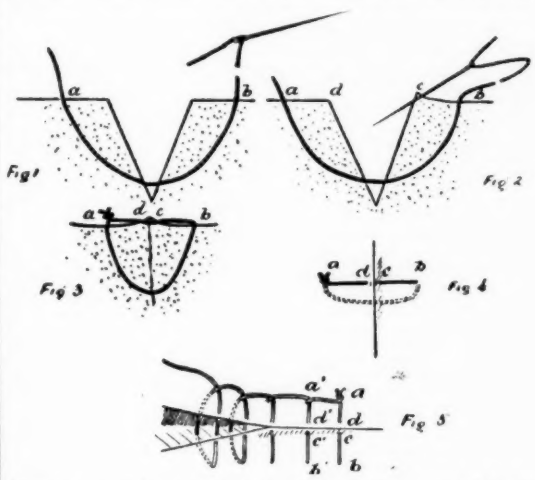
New Inventions.

A USEFUL SKIN SUTURE.

ONE hardly likes to claim originality for so simple a matter as a suture, and it is hard to imagine that any particular stitch has not been used before; but as I have employed it extensively during the past few months, and have found it a valuable addition to my stock of surgical methods, I venture to describe it.

The object of this stitch is to bring the depth of the wound together, and at the same time to prevent the inturning of the epithelial edges; and I have found it useful in closing a variety of wounds which are otherwise difficult to suture accurately, such as irregular wounds produced by the excision of gunshot wounds, wounds of the scrotum and of the abdominal walls, either when the skin is atrophied and the edges tend to curl inward, or when there is a great deal of superficial fat. It can be employed either for interrupted or continuous sutures, and the method of inserting it will readily be understood from the figures.

Figs. 1–3 represent a diagrammatic transverse section of a wound. The suture is first passed in the ordinary way



from *a* across the wound to *b*, taking up, if required, the whole thickness of the fatty layer (Fig. 1). The needle, which should be a fine one, is then inserted through the extreme edge of the wound, *c* (Fig. 2), passing from without inwards and taking up only the very minimum of tissue, then passed through the opposite lip of the wound, *d*, from the wound to the skin surface, and finally tied (Fig. 3). The surface appearance of the finished suture is shown diagrammatically in Fig. 4, where the heavy line represents the portion of the suture visible on the surface of the skin, and the dotted line the part of the suture which is buried. It will be seen that there are two parts to the stitch—the deep part, which obliterates any dead space in the wound, and the superficial part, which holds up the extreme edges of

the wound and prevents their inversion, actually slightly elevating them, although leaving their epithelial margins in accurate apposition.

To insert this stitch continuously the needle should be inserted in the side of the wound away from the surgeon, at *a* (Fig. 5), passed as deeply through the fat as may be considered necessary, and made to emerge on the side of the wound nearest to the surgeon at a corresponding point, *b*. The needle is then passed through the extreme edges of the wound, *c d*, just as for the interrupted suture, and tied. For the next stitch the needle is again inserted on the side of the wound away from the surgeon—that is to say, at *a'*—passing across in an exactly similar manner to *b'* and leaving a loop of thread (*a a'*) lying close to the skin and parallel to the wound, then through the lips of the wound from *c'* to *d'*, finally passing under the thread *a a'* and drawing the wound together. This is repeated as often as necessary until the wound is closed. If the apposition is not accurate this is easily amended by pulling the points *c* and *d* into position with a pair of forceps. It will be found that it is possible to close a wound with fewer stitches in this way than by the usual methods. Also, should it be necessary to open the wound to let out any serum, this can be done quite readily by sliding the points *c'* and *d'* along the thread *a' b'*, and pulling them together again to reclose the wound.

ARTHUR EDMUNDS, C.B., M.S., F.R.C.S.,
Assistant Surgeon, King's College Hospital; Surgeon for Gt. Northern Central Hospital; Temp. Surgeon-General, R.N.

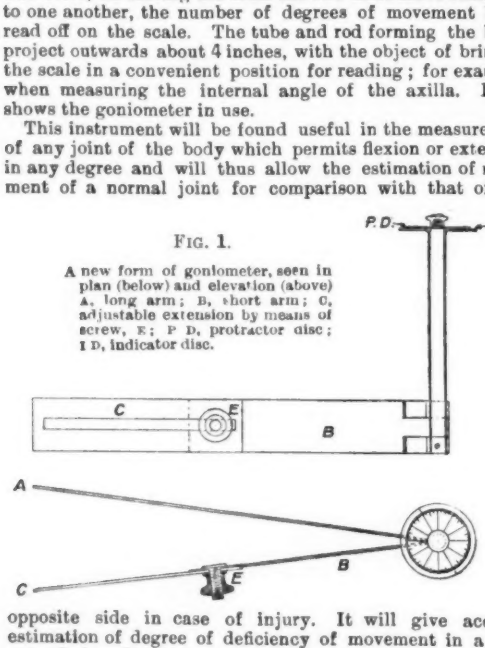
A NEW FORM OF GONIOMETER.

THIS is an instrument devised for the measurement of solid angles. It consists of: (1) Two pieces of straight metal, a long arm (A, Fig. 1) and a short arm (B), with an adjustable extension (C) by means of a screw (E) on the fixed portion and slotted extending piece joined by a hinged joint. (2) A hinge, consisting of a rod working concentrically within a tube, the rod being rigidly attached to one arm and the tube to the other. On the end of the rod is fixed a disc graduated in degrees (protractor disc) and on the tube a larger disc with two fixed indicator marks (indicator disc). Therefore, on moving the arms the two discs move relatively to one another, the number of degrees of movement being read off on the scale. The tube and rod forming the hinge project outwards about 4 inches, with the object of bringing the scale in a convenient position for reading; for example, when measuring the internal angle of the axilla. Fig. 2 shows the goniometer in use.

This instrument will be found useful in the measurement of any joint of the body which permits flexion or extension in any degree and will thus allow the estimation of movement of a normal joint for comparison with that of the opposite side in case of injury. It will give accurate estimation of degree of deficiency of movement in a joint caused by disease or new growth, such as exostosis, sarcomata, and osteoarthritic changes. Its value in tuberculous disease of joints will be demonstrated by the ability to fix a joint to the angle of greatest advantage to the patient, and splints can then be made accurately to the required angle. It will allow of definite estimation at the time of injury of the amount of change in the injured joint; as, for example, in a joint where there has been a fracture dislocation the reduction of the dislocation will not produce the definite symmetry of the normal limb. It will allow of a definite idea of the progress of a joint whilst treatment is being carried out.

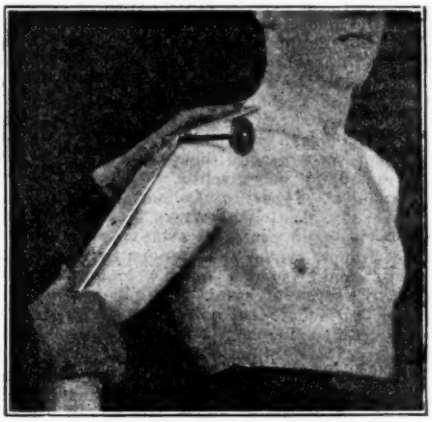
FIG. 1.

A new form of goniometer, seen in plan (below) and elevation (above) A, long arm; B, short arm; C, adjustable extension by means of screw, E; P D, protractor disc; I D, indicator disc.



At the present time when one is dealing with war-time surgery the question of the treatment of gunshot wounds of joints becomes of vital importance. The estimation of the rate of improvement of flexion and extension of the large joints in the limbs is a difficult problem to face without an adequate instrument of measurement. This goniometer is simple in its use and gives a definite and scientific reading in a matter of a few moments. Readings can be taken at regular intervals and will show by records kept the amount of progress made under treatment.

FIG. 2.



Demonstrating the application of the instrument.

This instrument was made for me by Chief Petty Officer R. Longdon, R.N., at R.N. Auxiliary Hospital, *Clerwood*, to whom my best thanks are due.

C. P. G. WAKELEY,
H.M. Hospital Ship ——. Temporary Surgeon, R.N.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

SUBSCRIPTIONS.

The following subscriptions to the Fund have been received during the week ending Feb. 18th:—

	£	s.	d.
Dr. John Orr	1	1	0
Dr. Theodore Thompson	5	5	0
Sir Felix Semon	2	2	0
Dr. W. F. Haslam... ...	2	2	0
Mr. W. S. Turner	0	2	6
Mr. F. P. Sergeant ...	0	10	6
Mrs. Des Vœux	5	0	0
Surgeon-General F. J. Lilly, R.N.	2	2	0
Royal College of Physicians of Edinburgh, per Dr. Norman Walker	26	5	0
Dr. Boodle...	0	7	0
Dr. Des Vœux...	25	0	0
Sir F. Needham, M.D.	5	0	0
The Society of Apothecaries of London... ...	100	0	0
Dr. R. Stanley Thomas	1	1	0
Mr. E. Spencer Evans*...	0	10	0
The Countess of Leven and Melville...	25	0	0
The Lady Betty Leslie Melville...	25	0	0
Mr. H. Gaselee	3	3	0
Miss May Rathbone ...	5	5	0
Major G. Grey Turner, R.A.M.C.	5	5	0
Dr. F. W. Goodbody ...	2	2	0
Mr. H. James Kluge ...	3	3	0
Mr. J. R. Keith	1	1	0
Dr. J. M. Chisholm ...	2	2	0

* Monthly donation during the period of the war.

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W. 1, and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited.

Dr. Robert A. Lyster, lecturer in public health and forensic medicine at St. Bartholomew's Hospital and county medical officer for Hampshire, has been appointed Editor of *Public Health*, the official journal of the Society of Medical Officers of Health, in place of Sir Shirley Murphy, who has resigned the position.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 23, 1918.

Quinine in the Treatment and Prevention of Malaria.

AT no time has it been more important than now to understand the exact method of administration of quinine by which the malaria parasite may best be attacked, no matter whether our knowledge is obtained by comparison of the practical experience gained empirically from treating patients or is to be inferred from the results of special research. Since the war hundreds of medical men who formerly had little expectation of ever being required to treat malaria cases have been fully occupied with this problem in consequence of the epidemics on the Macedonian, East African, and other fronts, while at home, as in France, it is necessary not only to treat returned soldiers but to be prepared for the possibility of having to treat civilians who may become infected from soldier carriers by means of the anopheline mosquitoes which are still common in some parts of the country. Needless to say, the effective cure of the malaria cases, entailing a corresponding reduction in the number of human gamete carriers, is also a most important element in any scheme of prevention of epidemic malaria.

Recognising that there are few questions on which opinion is so varied, the War Office early in 1917, when arranging for the concentration of malaria cases returned from overseas in special hospitals in England, where they might be treated by specially qualified medical officers, decided to invite those officers to coöperate in a scheme for comparison of the practical results obtained from different lines of treatment. The outcome has been a very valuable series of reports from hospitals at Aldershot, London, Epsom, Oxford, and elsewhere, which were summarised by Sir RONALD ROSS, the adviser of the War Office in these matters, in a paper read last week to the Society of Tropical Medicine. The treatments adopted were classified into (*a*) "anti-relapse quinine prophylaxis," which was designed for preventing relapses as much as possible without attempting absolute and immediate cure; (*b*) "short sterilising," which attempted absolute cure with treatments ordinarily continued only for a few days; (*c*) "long sterilising," aiming at producing absolute cure by longer courses than those given in (*b*); and (*d*) mixed treatments, and treatments with drugs other than quinine. The criterion of success was the disappearance of relapses during the observation periods practicable; nearly all the cases were of malaria (mostly benign tertian) which was already of considerable duration, and only a very few cases were original infections. The treatment in each of the classes stated above comprised different salts and preparations of quinine, administered by the mouth, and by subcutaneous, intramuscular, and intravenous injection, in different doses and for different periods, to larger or smaller groups of patients. The result from all the quinine treatments taken together was represented by some 27 per cent. of ascertained relapsing cases in a total of about 2500 patients. At Oxford a control was afforded by 192 men who were watched without any quinine treatment at all, and of these 89 relapsed within 27 days, and 76 were presently judged not to be sufficiently well to allow of quinine treatment being withheld any longer; so that 86 per cent. of the untreated cases remained ill and 46·5 per cent. actually suffered from relapses during the period. As regards the different methods and doses we do not quote the actual figures given by Sir RONALD ROSS. It was stated that considerable additions can now be made to them, and the discussion by the Society of Tropical Medicine, adjourned till next month, should bring out comments on the sufficiency of the numbers of patients in the several groups and on the advantages to be claimed for one or another group of results. The data supplied, however, appear to establish the fact that short intensive treatment by large doses of quinine (for example, up to 180 grains of sulphate or hydrochloride in three days) can, with rest, stimulants, and good after-treatment, be very well borne by the patient, and effect a substantial proportion of cures. The same can be said for doses in class (*c*) which in some instances totalled over 1000 grains in four weeks, large intramuscular doses being given during the first days of that period. But however the doses were given in classes (*b*) and (*c*), the liability to relapse in patients receiving the treatment was not any less than in cases treated much less heroically under the method of class (*a*), by giving comparatively small doses amounting to about 60 grains a week. It was concluded that doses of this order gave the best results both in respect of the prevention of relapses and as regards the well-being of the patient, and that this dosage could be distributed in various ways without producing any marked difference. The amount should not, however, be less than a daily dose of about 10 grains, as this showed a marked superiority over smaller quantities. As a whole, the observers found no conspicuous advantage in any one of the three methods of administration of quinine, intramuscular, or intravenous, or by the mouth. Chemical examinations of urine point to a tendency for the excretion of quinine, in whatever doses given, to reach a concentration of 7 to 11 grains per litre of urine, and do not favour the view that the drug is eliminated with a different degree of readiness when given by the mouth than when given by other methods.

These results, if they have failed to bring out any sensational short cut to the cure of malaria, give confidence in methods usually and conveniently employed, and enable the dosage for general use in the Army to be recommended on a substantial basis of recent differential experiment. The evidence that continued daily doses of only five grains afford a relatively slight protection against

relapse is important, and no doubt accounts for much of the disappointment which has been expressed at the results of the prophylactic use of quinine in this dosage in the malarious areas of Macedonia, where relapses are so common among the large proportion of the force which has become infected. Many now go further and hold that this practice has been proved useless in the Eastern war areas as a preventive of malaria, not merely in the matter of cutting short relapses, but in the prevention of first or new infections; under this view it must be accepted that a man who has just been bitten by an infected anopheline cannot count on obtaining any protection from quinine in such doses, even when they are taken immediately after, or within a few hours of, the bite. It is urged, moreover, that the continued dosage of prophylactic quinine may do harm by lowering the response to the drug when actual attack occurs. The matter is of much practical importance. Official instructions that anti-malarial measures in districts specially affected should include prophylactic daily 5-grain doses of quinine have had behind them a measure of experience and authority much too great to be disregarded, and the medical authorities of the Army would rightly have been held to have failed in their duty if they had not made provision for the supply of quinine for the purpose, and had not pressed its use in those malarious regions where the circumstances of the campaign prevent effective measures being taken to ward off mosquito-bite. If the view is now to prevail that the failure of the prophylactic use of quinine under war conditions has been demonstrated, we hope that the causes of the failure and the nature of the proof will be fully analysed and discussed. To decide the question of general orders in the matter, it might be enough to show that after prolonged trial in practice the results have not been sufficiently good to make insistence on systematic quinine prophylaxis worth while; this would mean to disregard the question whether the cause of failure was inherent in the drug and the habits of the malaria parasite or was to be found in the practical impossibility of giving the attention to regularity of administration, hours of dosage, and other details which the system requires. But an authoritative answer would still need to be given to the individual soldier going out for the first time to a malarious area during the bad season, who is prepared to observe instructions and to take drugs as and when he is advised. He requires to know whether he should or should not take daily quinine to ward off a first infection, and, if so, what amounts he should take. We hope that this aspect of the matter will not be lost sight of in the further discussion arranged for.

Dr. H. R. Kenwood completes his Milroy lectures on Training in Hygiene and Public Health at the Royal College of Physicians of London on Feb. 26th and 28th. Dr. E. P. Poulton delivers the Goulstonian lectures on Diabetes Mellitus on March 5th, 7th, and 12th, and Dr. G. F. Still the Lumleian lectures on Cœliac Diseases on March 14th, 19th, and 21st.

Foreign Bodies in the Lower Air-Passages and Œsophagus.

UNTIL a few years ago the presence of a foreign body in the lower air-passages gave rise to a very serious position; for though it was recognised that it should be removed as early as possible, yet the operation for its removal was severe and likely to lead to serious results. An attempt to remove through a tracheotomy opening a foreign body in a bronchus is fraught with no small degree of danger, and the probability of failure is not at all small. The surgeon has to work almost entirely in the dark, and good fortune is almost as much responsible for success as surgical skill; and should recourse be had to an incision through the lung the risk is greatly increased. Yet these, till quite recently, were the only accepted procedures. The position was not much better in the case of a foreign body lodged in the œsophagus. The use of the coin-catcher or other similar instrument was often, indeed, successful in removing the foreign body if it were not impacted, or perhaps the foreign body might be pushed down into the stomach, and so ultimately be evacuated; but if these attempts failed the surgeon had only the alternative of œsophagotomy. This operation is not difficult if it be done in the neck, though in this situation it is really a pharyngotomy rather than an œsophagotomy; but an attempt to open the œsophagus in that portion which lies in the thorax is an operation of great severity, and the results are far from good.

In the present issue of THE LANCET Mr. HERBERT TILLEY describes the modern method of removing foreign bodies from the lower air-passages and from the œsophagus by means of an illuminated tube through which the foreign body can be seen and through which it can be seized. The original instrument for this "endoscopy" devised by KILLIAN, though several modifications of more or less importance have been made, remains essentially the same. The illumination was for a long time effected by a lamp from above, but Mr. TILLEY now employs the distal illumination, a lamp being placed at the lower end of the tube, and all with experience will agree that this is a better method. In this country an anæsthetic is nearly always employed, and usually a general anæsthetic, though local anæsthesia may suffice in some cases; yet if any extensive manipulation be necessary to remove a foreign body firmly impacted general anæsthesia is certainly indicated, as with care there need be no increase in the danger to the patient. In America some surgeons, especially Dr. CHEVALIER JACKSON, of Pittsburgh, employ no anæsthetic even when dealing with a young child. Still, we believe that anæsthesia adds to the comfort both of the surgeon and of the patient. The method of procedure is sufficiently well known, but a few important points deserve emphasis. The patient lies on his back with the shoulders slightly raised and the head thrown back; the mouth and the larynx can then be brought almost into a straight line. With care and the adroitness gained by experience the endoscope is introduced with very little force, and

with hardly any discomfort in simple cases where no anæsthetic is employed. The interior of the trachea or œsophagus is clearly seen and ingenious forceps introduced, when the foreign body is removed, often with surprising ease; even when it is impacted the full and clear view obtained of its position enables the surgeon to see how it can be removed with the least damage to the tissues. The celerity of the operation is often remarkable, and may in the eyes of the relatives detract from the value of the procedure. Should the foreign body not be found in the trachea or bronchus the endoscope will enable the surgeon to follow it still further into the substance of the lung, so that it may be reached even when it has passed to a position not far from the pleura. The ease, the certainty, the expedition of the endoscopic method of removing foreign bodies from sites hitherto deemed inaccessible to the eye contrast strongly with the danger, the uncertainty, and the delay necessarily associated with blind searching. Mr. TILLEY quotes telling cases in which severe injury had been done to the œsophageal wall by unsuccessful endeavours to remove a foreign body before the endoscope was used.

The method of endoscopy is now employed by many, but there are still those who use for removing foreign bodies from the lower air-passages and from the œsophagus methods which can at best be described as antiquated, and which should no longer be thought worthy of consideration where an endoscope is available. The time element is important. Foreign bodies should never be allowed to remain longer than can be helped in the air-passage or in the œsophagus, although the acute uneasiness and discomfort to which they give rise immediately on their entrance before long may die away, and the channel become tolerant of their presence. So much is this the case that the surgeon must not rely unduly on the symptoms of the patient; the pain may have passed away, but if there is any reason to think that a foreign body has entered the passages he must not be misled by the absence of symptoms. Even if a skiagram supplies no precise information, both the air-passage and the œsophagus should be examined, if need be, in turn; for, on the one hand, respiratory symptoms may be caused by a foreign body in the œsophagus, and, on the other, difficulty in swallowing may arise from a foreign body in the air-tube. Endoscopy in trained hands presents little risk, while the danger of leaving a foreign body in the lower air-passages and œsophagus is great. Endoscopy therefore should be more widely practised, and it is with this idea in our minds that we insist on its virtues, well known as they are. Every practitioner ought to familiarise himself with the technique and every medical school should supply the necessary facilities.

Dr. Fleming Mant Sandwith, whose sudden death occurred at Bournemouth on Sunday last, possessed an unrivalled knowledge of disease in the Near East, and was until recently consulting physician to the Eastern Mediterranean Force, and temporary Colonel in the A.M.S. He was in his sixtieth year.

Annotations.

"Ne quid nimis."

UNMARRIED MOTHERHOOD.

Sir Bernard Mallet's recent Presidential address at the Royal Statistical Society established the practical constancy during the past few years of the number of illegitimate births in these islands—roughly 50,000 a year. The excessive death-rate of these children born out of wedlock is equally well known; figures given in the annual reports of medical officers of health of large towns show that the infant mortality rate for illegitimate is always twice and often three times or more that of legitimate offspring. Taking at random two available five-year averages the figures are 197 and 60 for the borough of Hampstead, 162 and 67 for New South Wales. The sad experience is universal. Doubtless all the factors which bear hardly on the necessitous mother bear more hardly upon her in the absence of paternal responsibility, although it is somewhat surprising to find that the last-named factor is apparently of chief importance. In Norway, since 1914, the State has assumed responsibility for finding the child's father or for acting the father in case he cannot be found, with the alleged result of reducing the death-rate of illegitimate infants to the normal figure. More surprising still is the authoritative statement that the difficulties anticipated from legislation have not arisen, inasmuch as out of 8000 paternity cases heard during two years in the Norwegian courts, appeal against the decision was only raised in nine. From the public health aspect there has never been any excuse for the differential treatment of different groups of necessitous mothers. The interest of the child is paramount. But those who fear that any relaxation of "deterrent" methods in regard to illegitimate parenthood may result in its increased frequency should look at all sides of a situation which is undergoing rapid changes. The means of preventing conception and of arresting embryonic life at its early stages are, for better or for worse, becoming the common knowledge of the workers of this country. Impregnation or the opportunity for it having taken place, it may therefore be morally the more courageous, as it is hygienically the more fitting, thing for the unmarried mother to take the risk of bearing a child. The fear of public disgrace may simply result in action which blunts the private conscience. Some of these views were presented with force at a conference on provision for unmarried mothers and their children convened at the Mansion House on Feb. 14th by the Child Welfare Council of the Social Welfare Association for London. Marked harmony characterised the proceedings of this conference, beginning with Sir Charles Wakefield's sympathetic opening address and ending with a unanimous decision to form a National Council for securing better provision for mother and child on the lines laid down in the following recommendations:—

1. That any scheme adopted should be elastic and not exclude any mothers in need; whether married or unmarried; should be carried out in conjunction with the health authorities and existing societies, and be linked up with maternity and infant welfare work; and should enable mothers to keep their babies with them for at least two years.

2. That provision should be made in the following forms:—(*a*) Waiting homes for expectant mothers; (*b*) maternity homes; (*c*) allowances for mothers whose circumstances and

home surroundings make it desirable for them to continue to live at home; (*d*) residential accommodation, with day nurseries attached, for mothers (with babies) who wish to live with their babies and go out to work; (*e*) foster-mothers, small homes, or adopting parents for the babies of those who cannot keep their children with them; (*f*) special homes for mothers suffering from such defect or disease as should preclude them from keeping their children with them.

3. That the cost of the provision recommended should be met partly by grants from Government departments and local authorities, and partly by voluntary subscriptions and payments from the mothers, but in no case by the Poor-law authorities.

A new National Council may seem to some to be superfluous, but from the figures which we began by quoting it will be seen to have each year 50,000 births to deal with and some thousands of avoidable deaths.

WIRE-BANDING FOR FRACTURES.

Dr. F. J. Cotton and Dr. John Duff, jun., of Boston, Massachusetts, have described in *Surgery, Gynecology, and Obstetrics* a new method of placing a metal band round a fractured bone. The use of a wide band has been found to give rise to a weak spot in the bone, for in several cases the bone has broken later at the exact site of the band; it is probable that the broad band has interfered with the nutrition of the bone locally. This disadvantage can be obviated by the use of a very narrow band, in fact, a piece of wire. Binding a broken bone with wire is no new procedure, but the authors have devised a very neat and effective way of drawing the wire tight without breaking it. The wire has a brazed loop at one end, and when the wire has been passed round the bone, the loop is fastened to a hook in a special pair of forceps and the other end of the wire is fixed with a screw; by approximating the handles of the instrument the wire is drawn taut, and then a turn and a half fixes the wire. The apparatus is certainly convenient for use in fractures where wiring will suffice; it certainly deserves a trial. The authors use phosphor-bronze wire, and they have employed the method with success in a few cases, but not in a sufficient number definitely to establish its value.

THE "QUADERNI D'ANATOMIA."

THE "Quaderni d'Anatomia," by Leonardo da Vinci, has had a fate stranger even than that reserved for his other works. Written early in the sixteenth century, almost 300 years were to come and go before any serious reference was made to it, while another 100 years were to pass before it was published in an adequate or complete form. The interest of the work, which formed the subject of two recent Arris and Gale lectures by Professor William Wright, lies largely in the fact that it provides the spectacle of certainly one of the ablest and most versatile men who have ever lived attempting the solution of some of the main problems of anatomy and physiology at a period when the systemic circulation, osmosis, oxygen, and the microscope were all unknown. In addition to these grave defects in his knowledge, Leonardo, like all his contemporaries, was further handicapped by the inheritance of two fundamental errors—viz., the belief that the arteries contained free air and that the interventricular septum of the heart was penetrated by narrow passages through which the blood passed from the right ventricle into the left. The nearest approach which Leonardo made to the elimination of the first of these errors was that he in one passage denied that free air entered the heart from the lungs, and wrote of the blood in the lungs being merely refreshed, thus returning to the correct Aristotelian view. Leonardo's main contributions, had the publication of his work not been delayed, would have included a more precise description of the interior of the heart and large vessels than had ever been supplied before, thanks, no doubt, to his skill in draughtsmanship, and a singularly correct account of the action of the thoracic and abdominal muscles in respiration. The book was intended as a text-book for students, and it is of interest to find how modern were his methods, as, for instance, the representation of opaque parts as transparent so that the relations of underlying structures may be observed, the pouring of wax into hollow viscera in order to obtain casts of their interior, the study of comparative anatomy, and in one instance at least the practice of vivisection. Although Leonardo's work cannot be said to have had any effect on the progress of anatomy, it must always remain an interesting contribution, while the question as to what its effect might have been can never be finally decided.

MILK FOR MOTHERS AND CHILDREN.

IT cannot be too widely known that local authorities all over the country now have it in their own hands to divert the available supply of cow's milk to those by whom it is most needed. By administrative order every child under 18 months of age is entitled to 1½ pints of milk a day, every child between 18 months and 5 years to 1 pint a day, and nursing and expectant mothers to the amount considered necessary for them by medical authority. Priority certificates are granted by health officers and those attached to child welfare centres, while the local authority is entitled to make the price of the milk fit the means of those who need it. Any expense incurred in so doing will be met in equal shares by a charge on the local rates and a grant from the Local Government Board.

ANTIMONY IN ANIMAL TRYPANOSOMIASIS.

RHODESIAN trypanosomiasis, although refractory to arsenic, can be controlled by antimonial preparations given intravenously, and in a letter published in THE LANCET two years ago (1916, i., 102) Dr. C. W. Daniels and Mr. H. B. Newham claimed a more permanent result in a case of human infection with *T. rhodesiense* by means of subcutaneous injections of 30 minims twice daily of Martindale's injectio antimonii oxidi, equivalent to gr. 1/20 tartar emetic. Their success induced Mr. L. E. W. Bevan, M.R.C.V.S., to try the effect of the same treatment on cases of trypanosomiasis in animals, and his results are recorded in the 1916 report of the Government veterinary bacteriologist for Southern Rhodesia. Injected into pigs infected with a small trypanosome of the *pecorum* group the drug produced no appreciable effect. To both pigs and sheep doses containing as much as 0·5 g. of antimonious oxide were given, but though the animals suffered no harmful effect from the large quantities of the drug it had no apparent influence on the course of the disease. An ox naturally infected received up to 2 g. of the salt in suspension, but the parasites did not disappear from the blood, and the animal died from trypanosomiasis six days after the last injection. The results, therefore, of the antimonial treatment of animal trypanosomiasis have so far been disappointing.

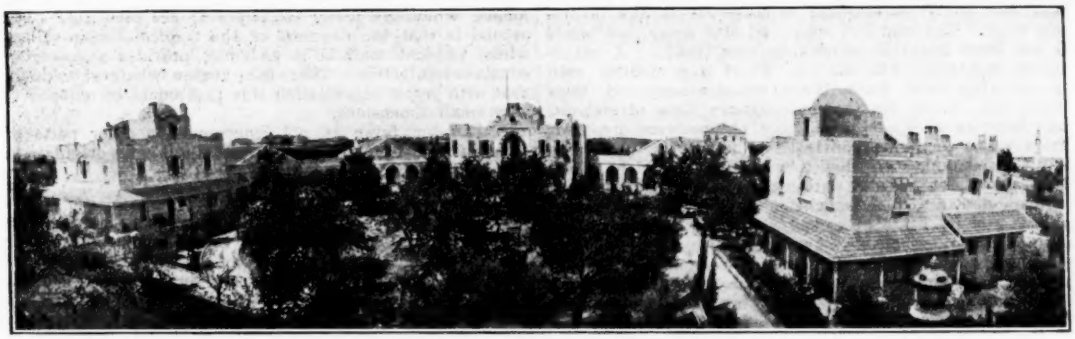


FIG. 1.—English Mission Hospital at Jerusalem.

JERUSALEM FROM THE POINT OF VIEW OF HEALTH AND DISEASE.

BY E. W. G. MASTERMAN, M.D., F.R.C.S., D.P.H.,

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JERUSALEM lies some 2400 feet above the level of the Mediterranean and 3700 feet above the Dead Sea. The site is largely shut in by higher mountains. The older parts of the city are built upon a vast accumulation of rubbish, the débris of previous cities, in places over 100 feet deep. Modern Jerusalem has in normal times about 80,000 inhabitants, over two-thirds being Jews, most of whom depend largely upon charity. During the last 30 years there has been a rapid growth of suburbs to the north, north-west, and west.

As Jerusalem is inhabited by representatives of all the nations of Christendom, is visited annually by thousands of tourists and pilgrims from all parts, and is a "Sacred" City in the eyes of Christians, Jews, and Moslems, its sanitary condition cannot continue a matter of indifference, as it has been to a large extent under the Turkish Government. Almost all efforts made to improve the condition of the city have come from outside sources, and many radical improvements which different European bodies would gladly have undertaken as to water-supply, drainage, &c., have been persistently thwarted by the Turkish authorities.

Climate, Water-supply, and Drainage.

As to climate, the mean temperature for the four summer months (June to September) is in Jerusalem 74° F. (in the maritime plains 80°, and on the banks of the Jordan 92 5°) The mean maximum temperature in these summer months is 84 3°; a temperature of over 100° in the shade is very exceptional. The temperature is largely mitigated by dryness of atmosphere and by a cool breeze. During the rainy months of winter (December to March) the mean temperature is 53 6° (in the plains 57 1° and on the Jordan 71 2°). Frost is not uncommon, and snow some years lies for several days—sometimes to a considerable depth.

The rainfall in Jerusalem has now been carefully watched for over half a century. Like all this part of the Near East there is a wet winter season and a very dry summer season, each of about four months' duration. The mean rainfall is now about 26 5 inches; maximum, 42 95 inches, 1877–78; minimum, 12·5 in 1869–70. The most disagreeable and unhealthy days occur during May and from the middle of September to the end of October, when the dry south-east wind—the sirocco—blows sometimes for several successive days hot and stifling from over the deserts.

The water-supply of Jerusalem has ever been a problem. The ancient spring known as the "Virgin's Spring," or to the Arabs "*Ain Umm ed Deraj*" (lit., the Spring of the Mother of the Steps), and known in the Old Testament as Gihon, originally, no doubt, gave a fresh and plentiful supply. But though it is now at times fairly plentiful—but intermittent—the quality is bad. The other source, *Bir Eyyub*, is a deep well with a perennial supply at the bottom of equally sewage-tainted water. In Roman times—possibly originally a little earlier—great aqueducts were made to bring water to the city, but the most that reaches the city now is a 4-inch iron pipe, and at two points the poor are at stated hours allowed a meagre supply. This is the only really fresh water available, but the whole site of the city is riddled with cisterns of many kinds. All houses have private cisterns, and they are a satisfactory source of supply if kept in good repair, cleaned periodically, and if no water is allowed to run into them except from a well-cleaned roof. But these provisos are often neglected. There has in the past been no sort of inspection or control over these cisterns, all of which need to be most rigidly supervised and provided with pumps. Various schemes have been made in recent years to provide the city with a better water-supply. I think it is a question whether it would not be more practical to enclose a great catchment area on higher ground west of the city and collect the rain-water in cisterns for conveyance to the city by pipes.

The drainage of Jerusalem also requires immediate attention. The existing sewers are old and utterly useless. Needless to say, nearly all the w.c.'s in the city are untrapped—the native w.c. being an open slit between flagstones, flushed only at rare intervals; it is not surprising that flies abound all the summer, and the older city is one of various and unpleasant odours. In some of the hospitals and schools a system of cesspools has been adopted.

Want of Health Organisation.

Under the Turks no system of notification of infectious diseases was inaugurated, and amid many hospitals no efficient accommodation of cases needing isolation was provided. The only disease which seems to have been taken seriously in the Turkish Empire is cholera, and most elaborate, but fantastic and ridiculous, precautions are taken from time to time to exclude this disease. It must be admitted that on several occasions when cholera[1] has raged in other districts, it failed to reach Jerusalem. Vaccination is not enforced and small-pox epidemics[2] in this city are terrible in the extreme. Notification of deaths has never been carried out seriously. Recently certificates of death from medical men were asked for by the burial authorities, but the whole thing was an utter farce and therefore was rightly dropped.

It must not be thought that all this want of health organisation was taken lightly by the medical men of the city. The difficulty has been the supineness of the Turks, the jealousy of all the various nationalities and their unwillingness to work together, and the want of close union and coöperation on the part of the medical men. The first really hopeful movement in a right direction was made shortly before the war, when, through the efforts of Professor Mühlens,[3] a German professor of tropical diseases sent out by a Berlin committee, a kind of "International Health Bureau" was with infinite difficulty established. Professor Mühlens was genuinely anxious to get the coöperation of other nationalities, and particularly of England. Locally I had the privilege of representing the British and American consuls on the international committee, and was endeavouring almost up to the outbreak

of hostilities to get a whole time British scientific medical man sent out from England to coöperate in the laboratory work. The war has swept all this away, but while it was there great improvements were made. A pathological laboratory was started, where any medical men in the city could have blood examinations and tests made—e.g., Widal, Wassermann, cultures, films of malaria, &c.; tumours were examined, &c.; serums were prepared. There was a small Pasteur Institute for rabies. This was only the beginning of what it was hoped would be done. By means of lectures and publications in English, French, German, and Arabic a knowledge of the true nature of malaria and its mode of spread was being diffused and an attempt to purify the cisterns was begun.

All this now waits for England to reorganise. It is a great work which is certain, if carried out, to have enormous results for good in the city and the land. Jerusalem is a city of hospitals, but half of them could be emptied if an efficient department of public health would organise these needed reforms. Although it may be necessary to have some form of international health committee, the executive should be British and free from any form of partisanship.

Diseases of Palestine.

The diseases of Jerusalem are very many. Variola, varicella, measles, enteric, typhus, scarlet fever, influenza, pertussis, and cerebro-spinal fever all occur in epidemic form, and I have seen them claim their victims by the hundreds. Until recent years scarlet fever was distinctly uncommon, and in normal times enteric is probably not as widespread as in Cairo. During the war we hear that typhus has been very rife. In my hospital before the war I have had three of my nursing staff very ill with it and one native servant died—all infected from sporadic cases. Such diseases as acute rheumatism (and consequent endocarditis), pneumonia, broncho-pneumonia, and chronic rheumatic arthritis are all common. Tuberculosis, both pulmonary and in the glands, joints, and bones, is now very common all over Palestine,[4] though there is reason to believe that it was rare formerly. Appendicitis is uncommon among the natives and so is gastric ulcer. Carcinoma must be much less common, too, among the Syrians than among Europeans.

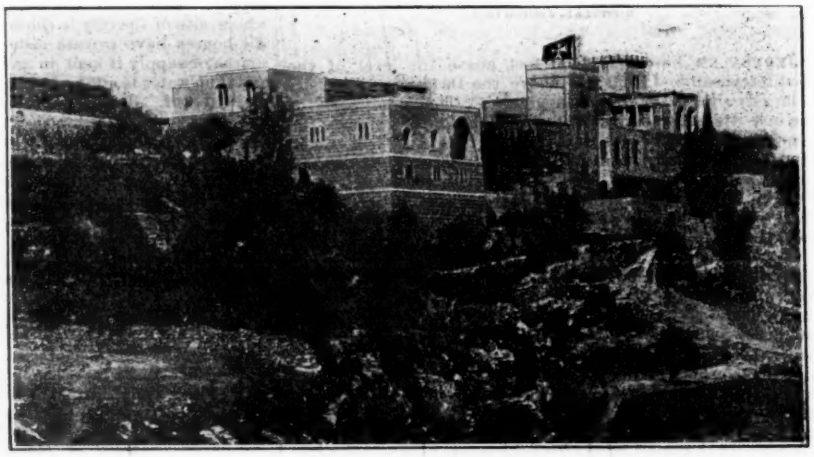

FIG. 2.—The British Ophthalmic Hospital at Jerusalem (reported to have been in large part destroyed on the evacuation of Jerusalem by the Turks).

Malaria.

The greatest scourge of Jerusalem is malaria, which in the autumn months, when the malignant subtertian fever is prevalent, is, practically speaking, universal. An examination at this season of some 4626 children actually attending school in Jerusalem showed that 27·3 per cent. had malarial parasites in the blood and of 7771 persons of all classes and conditions 26·7 per cent. The percentage was curiously divided, being among the poor Jews 40·5, Mahomedans 31·1 per cent., native Christians 16·4 per cent., and Europeans 7·2 per cent. These last have in many cases learned the lesson of prevention and early cure.

As part of my share of work on malaria for the Bureau I examined microscopically in thick films the blood for all the "fever" cases coming to my hospital [5] for a year—that is, as far as possible, first attendances, over 2166 in all, and from these figures made a chart of cases. All three forms of malaria increase from June, but subtertian cases, which are absent in April and May, form the vast majority of the cases from July to November. The next commonest form is the simple tertian, while the quartan form, which is very persistent and resistant to treatment, occurs steadily throughout the year, though increasing somewhat in the autumn. There are two factors of importance bearing on this question. The first is the great number of mosquitoes, among which *Anopheles maculipennis* are plentiful.[6] The second is that the nearness of the tropical Jordan valley, where tropical malaria is endemic, provides a source of constant reinfection. There is no reason whatever to doubt that with proper organisation this pest could be reduced to very small dimensions.

Blackwater fever is not uncommon in other parts of Palestine, but I have known several fatal cases originate in Jerusalem itself.[7]

Other Diseases.

Of other tropical diseases it is only necessary to make brief mention here. Dengue fever[2] occurs in rather frequent epidemics. Recurrent fever due to spirochætæ is found occasionally. There are many sufferers from tropical boil in Jerusalem—most of these come from Aleppo and its neighbourhood and from Baghdad, and I have never seen one originate in the mountain districts of Palestine. There is a local variety of the disease known as Jericho boil, which occurs in the Jordan Valley, which I have described elsewhere.[5] I excised some of these, and the pathologist who investigated them considered that it was a distinct disease.[8] This is very doubtful.

Jerusalem is one of the four centres in the Holy Land where lepers congregate. The majority, happily, are segregated in the Moravian Leper Hospital, but there are still a number who live in a row of miserable cottages in the lowest part of Kedron Valley; during the travelling season they come in from other parts of the land. I have had several cases of bilharzia, but have never been able to satisfy myself that the patient had been infected in Palestine itself. Ankylostomiasis, if present, must be very rare; frequent examination of stools has proved negative. This is remarkable, as both these diseases are very common in Egypt. I have had a few cases of dracontiasis in which I have extracted the guinea-worm, but they have been importations from Central Asia or Yemen. I have had one negro with ainhum, but he, I believe, was from the Sudan.

Cases of insolation—among Europeans—are seen occasionally, but residents soon recognise that the rays of the sun are very powerful in this clear atmosphere and this altitude, and protect themselves with sun helmets in the hot season.

With regard to the very prevailing varieties of eye disease Harrison Butler [9] has reported very fully, and the statistics of the British Ophthalmic Hospital are also available. Trachoma is exceedingly common, with its many sequelæ. Acute ophthalmia is very prevalent and dangerous, occurring as a regular epidemic every year in the hotter season, but varying in virulence from year to year. The most common organisms recognised as causing it are the Koch-Weeks bacillus (66 per cent.) and the pneumococcus (22 per cent.). Severe corneal ulcers are usually due to the gonococcus. The

onset of the annual exacerbation of ophthalmia is usually just after the occurrence of the highest mean temperature. Infection is due to flies and to the use of common mattresses or the use of dirty rags, &c., for wiping the eyes. Cataract occurs much as in England, but the cases stand operations much better, iritis being a rare disease in Jerusalem. "In Palestine not 10 per cent. of the population have absolutely sound eyes" (Butler).

Hospitals in Jerusalem.

By far the oldest establishment is the English Mission Hospital founded in 1842 and transferred to handsome new buildings a mile outside the old city walls in 1897. (Fig. 1.) The new hospital was erected on plans made by Professor Beresford Pite. It is built on the pavilion system, and has two wards for men, two for women, and two for children. There are also some private wards for English tourists; its present number of beds could be doubled without altering the original plan. It had before the war accommodation for 70 beds and cots, with a staff of two English doctors, six English nursing sisters, and native assistant nurses and servants. It has in the past been used exclusively for Jews (Kosher food being the rule) except as regards the private patients, but since the war broke out it became—until our capture of Jerusalem—a "Red Crescent Hospital," and I hear that at one time no less than 200 typhus cases were accommodated there. It is now temporarily a Divisional Headquarters, but may shortly be reopened as a general hospital for all classes, and, it is to be hoped, will continue to be so used.

The German Hospital, under the Kaiserswerth Deaconesses Committee, was originally an outgrowth of the English Hospital. It, too, was at first within the old wall, but now has fine buildings near the latter. It accommodates a little over 100 beds, and is a good surgical centre. Then there are besides a Turkish Municipal Hospital, and French, Russian, Greek, Armenian, and Italian Hospitals—the last a very handsome building still in process of construction when the war broke out. There was also a small hospital, started in rented premises, in connexion with the English bishop and supported largely from Canada.

The Jews have four general hospitals, one of which, known as Shaaret Zedek, is the largest and finest hospital in the city. There are a hospital for lepers supported by the Moravian community, and two eye hospitals. One of these is Jewish, the other is the British Ophthalmic Hospital (Fig. 2), one of the most appreciated institutions in Jerusalem. It is supported by the Grand Priory of the Order of the Hospital of St. John of Jerusalem in England. It has two surgeons and a competent staff, and is of immense benefit not only to the residents of Jerusalem of all classes but also draws patients from every part of Palestine. It occupies picturesque buildings on the western side of the valley of Hinnom between the railway station and the Jaffa Gate. Between 30,000 and 40,000 out-patients and 1200 in-patients are treated annually. News comes to hand that the Turks used it as an ammunition store, and blew a great part of it up when they had so hastily to evacuate the city.

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LITERARY INTELLIGENCE.—The University of London Press announce the immediate publication of seven further volumes in the series of Military Medical Manuals. These are: The "Clinical Forms of Nerve Lesions," by Mme. Benisty, and edited by E. Farquhar Buzzard, M.D.; "The Treatment and Repair of Nerve Lesions," by Mme. Benisty, edited by E. Farquhar Buzzard; "Fractures of the Lower Jaw," by L. Imbert and P. Real, edited by J. F. Colyer, F.R.C.S.; "Artificial Limbs," by A. Broca and Dr. Ducroquet, edited by R. C. Elmslie, M.S.; "Fractures of the Orbit," by F. Legrange, edited by J. Herbert Parsons, D.Sc., F.R.C.S.; "The Treatment of Fractures," 2 vols., by R. Leriche, edited by F. F. Burghard, M.S., F.R.C.S.

THE CONTROL OF VENEREAL DISEASES.

THE DIAGNOSIS OF SYPHILIS: ITS TREATMENT BY NOVARSENOBENZOL, MERCURY, AND IODIDE OF POTASSIUM.

BY H. W. ABBOTT, M.R.C.S. ENG., L.R.C.P. LOND.,
MEDICAL EXAMINER TO THE ROYAL INSURANCE COMPANY.

(*Concluded from p. 272.*)

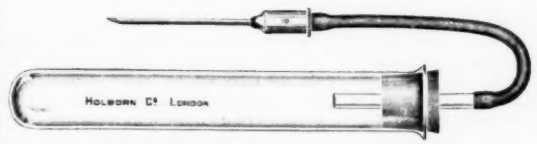
III.—*The Examination of the Patient's Blood Serum for the Wassermann Reaction.*

THIS cannot easily be undertaken by the busy practitioner; the examination is somewhat lengthy, requiring several reagents not readily prepared except by a worker who is constantly making the examination. Moreover, it is necessary for the investigator to have acquired a fair amount of experience before being able satisfactorily to interpret the result of the examination. It is therefore best for those of us in general practice to take a sample of blood by veni-puncture from a patient suspected to be suffering from syphilis and to send it, in the tube provided, to a pathologist. The technique for obtaining the specimen is very simple.

Pass a sterile needle into one of the veins of the arm, having first applied a tourniquet to render them prominent. As soon as blood is issuing from the base of the needle, proving that the bevel is within the venous blood stream, connect it up with a 10 c.cm. sterile syringe and withdraw about 5 c.cm. of blood, which can be ejected into the tube for transmission to the pathological laboratory, or a very useful apparatus is that which is used at the Military Hospital, Rochester Row.

It consists of a test-tube with a rubber cork, through which are bored two holes. The first is for a vent. Through the other a piece of glass tube is passed, one end of which projects a short distance into the test-tube. To the other end of the glass tube is fitted a piece of rubber tubing connected with a tap and needle. (See Fig. 3.)

FIG. 3.



Rochester Row pattern blood collecting tube.

This little apparatus is sold complete by the Holborn Surgical Company, Thavies Inn, Holborn-circus, E.C., at a very moderate cost, or of course any one can easily fit one up for himself.

The practitioner must, however, remember that the average time between the commencement of the primary sore and the appearance of the positive Wassermann reaction is four to six weeks, the maximum period being eight weeks. If the blood serum from syphilitic patients be tested 15 days after the appearance of the initial sore there is only obtained 50 per cent. of positive reactions. So that if you wait for a diagnosis in a recently infected case of syphilis until the Wassermann reaction becomes positive then you will have wasted much valuable time. Hence the necessity for the microscopical examination of the serum obtained from a penile or other suitable lesion.

A specimen of blood serum is examined for the Wassermann reaction principally for the following reasons:—

(1) For primary diagnosis; (2) to determine whether the patient is able to discontinue treatment; (3) to know the stage of the disease.

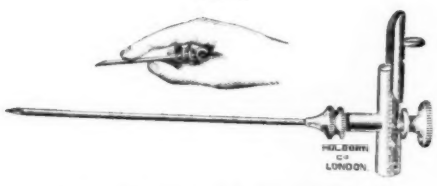
(1) *For primary diagnosis.*—Occasionally a patient presents himself many years after infection, the actual occurrence of which may not have been recognised by him. There are now perhaps only indefinite, doubtful tertiary symptoms of specific disease. It is, then, very important to have a Wassermann test performed in order to obtain an unequivocal diagnosis.

(2) *To determine whether a patient is able to discontinue treatment.*—Suppose you consider that your patient has had a sufficient course of treatment, then you have a complement reaction done, to determine whether the course has

been really efficacious. If there be the slightest indication of a positive reaction the patient is, of course, given further treatment. The Wassermann test should be made not later than one week after the completion of the course. An intensification of symptoms often immediately follows the administration of an antisyphilitic remedy. It produces a stirring-up of the *Sp pallidæ*, if they be present, and they give, as it were, a dying kick. This exacerbation is reflected in the complement fixation test, the phenomenon being known as the Jarisch-Herxheimer reaction. So that a negative result obtained not longer than one week after cessation of treatment is of more value than a negative reaction obtained a month or six weeks after the last injection. If the Wassermann is returned negative, we can of course stop treatment, but in primary cases it is necessary to have the test repeated every three months for two years, and in secondary cases it is well to have a test done every three months for three years. In doing these examinations for patients apparently cured, we can strengthen the value of the complement fixation result by giving a provocative injection not more than one week previously.

(3) *To know the stage of the disease.*—When taking an exudate for microscopical examination it is usual also to take a sample of blood for the Wassermann test. If this proves negative, and yet *Sp. pallidæ* be found, then we know that we have got an early case; certainly not more than eight weeks have elapsed since the first manifestation of the disease, probably not more than four to six weeks.

FIG. 4.



White-Jeanselme's lumbar puncture needle.

IV.—*The Examination of the Cerebro-spinal Fluid.*

It is not enough to obtain a negative complement reaction from the blood serum in order to be able to give our syphilitic patients a clean bill of health. An examination of the cerebro-spinal fluid must also be made, more especially if there be any cerebral or spinal symptoms of disease. The blood serum may give a negative complement reaction when the cerebro-spinal fluid, being examined, is shown to be at least pathological. Sometimes, although the blood serum gives a negative, the cerebro-spinal fluid will give a positive Wassermann reaction. Cerebro-spinal fluid is obtained by lumbar (thecal) puncture, which is performed by passing a special needle with its stilette in situ through the interlaminal space between the third and fourth, or more often the fourth and fifth, lumbar vertebræ into the spinal canal. The stilette is then withdrawn, when the cerebro-spinal fluid will flow through the lumen of the instrument. There are many patterns of needles used for lumbar puncture, but the writer is of opinion that White's modification of a Jeanselme's needle is as good as any. This is provided with a delivery tube for the collection of the fluid (see Fig. 4).

Many workers, however, have used, and still continue to use, with the greatest success Barker's lumbar puncture needle (see Fig. 4A).

FIG. 4A.

The technique is as follows:—

The patient sits on a bench or table, and tucking his head well into the abdomen he arches his back as much as he possibly can, so as to open out the intervertebral spaces; or if the patient be in bed the knees and shoulders should be approximated with the same object. The surgeon draws a line mentally or actually, joining the crests of the ilia. This line very generally passes through the interspace between the fourth and fifth lumbar vertebræ when the back is well curved. The surface of the skin is painted with a solution of iodine 2 per cent. in spirit over a wide area—say, 8 inches in diameter, and then a few drops of a 3 per cent. solution of eucaine hydrochloridum is injected at the site of the puncture, first subcutaneously, and then without withdrawing the needle deeper into the muscle on either side. This renders the operation absolutely painless. A longitudinal cut of 1/6 inch in length is made in the anæsthetised skin at the site of the puncture. This allows the instrument to be inserted without being gripped by the skin, which is very necessary when you want your sense of touch unimpaired.

Hold the needle with the butt end against the root of the thumb, so as to be able to press firmly; the thumb and first finger should be coiled round the instrument, while the third, fourth, and fifth fingers rest on the patient's back, in order to steady your hand and prevent the instrument from suddenly being jerked into the tissues.

Define the spinous process on a level with, or just above, the line which has been marked. This will be the fourth. Enter the needle half an inch to one side and half an inch below the upper border of this process, directing the instrument forwards and somewhat inwards. Many operators find it sufficiently accurate to puncture half an inch to one side of the centre of the interspace. The point indicated above is, however, slightly higher, and is frequently found to be exactly in a level with the interlaminal space.

The needle passes for about the first 1½ inches quite easily through the muscles, then if it be in a wrong direction it is brought to a standstill by bone. If this occurs, partially withdraw the instrument and alter the direction; if, however, the needle be in the correct course you are conscious, as you push the instrument onwards, that after passing through the muscles it encounters tissue which feels like india-rubber (the interlaminal ligament—ligamentum subflavum). As the instrument enters this india-rubber-like tissue give it a twist—i.e., rotate it. This tends to prevent the ligament being pushed in front of the needle-point.

As you press the instrument onwards suddenly you will feel something give way, and you will then know that the needle has passed through the ligament and is now in the cerebro-spinal canal. Then withdraw the stilette and allow 3 or 4 c.cm. of fluid to run away, which is done in order to cleanse the needle from any contamination with blood, which would, of course, vitiate the cell-count. Now allow 6–8 c.cm. of cerebro-spinal fluid to flow into a test-tube for the examination.

When the cerebro-spinal fluid has been collected withdraw the needle by a rapid movement. Disinfect the site of the puncture with iodine as before and apply a piece of rubber plaster, about 2 inches square, with a piece of boracic lint in the centre to cover the actual wound. Make the patient go to bed afterwards for the rest of the day. If he does not do so severe headache and even death may supervene.

When the pathologist has returned the result of his examination of the cerebro-spinal fluid you must remember the following points to determine whether it is pathological or not:—

Cerebro-spinal fluid consists of (1) fluid; (2) cells.

1. *The fluid.*—(*a*) If this contains globulin then the fluid is pathological; (*b*) if the reaction of Langé (which consists of a gold test) is positive then the cerebro-spinal fluid is distinctly suspicious; (*c*) if the Wassermann reaction is positive then the central nervous system is syphilitic

2. *The cells* (*lymphocytes*).—(*a*) If these number 5 per c.mm. the c.s.f. is non-pathological; (*b*) if these number 10 per c.mm. it is on the border-line; (*c*) if these number above 10 per c.mm. it is certainly pathological.

On the examination of the cerebro-spinal fluid Colonel Mott has sent me the following expression of opinion:—

"I regard the examination of the cerebro-spinal fluid as of far more importance in the diagnosis of syphilitic nervous diseases than the examination of the blood. I think the examination of the cerebro-spinal fluid should be made more frequently than it is, as the complications resulting from syphilitic infection are especially severe on the nervous system."

Course of Treatment for Patients Found to be Suffering from Syphilis.

The following course of treatment has been worked out at the Military Hospital, Rochester-row, and it has been found to give most excellent results. In my own hands it has been eminently successful, and although, of course, any of the approved arsenobenzol preparations can be used, I have myself exclusively employed novarsenobillon during the last year for intravenous injections. The course consists of the injection of 6·15 g. of the drug according to the following table.

Day of treatment.	Doses of novarsenobillon injected intravenously in grammes.	Mercurial cream injected intramuscularly in grains.
1	0·45	1
4	0·45	—
8	0·45	1
15	Interval.	1
22	0·6	1
29	0·75	1
36	Interval.	1
43	0·75	1
50	0·9	1
52	Wassermann test done.	—
54 to 58	Pot. iodidi given grs. x. t.d.s. inter cib.	—
69	0·45	1
76	0·6	1
83	0·75	1

The potassium iodide is given in order to assist the phagocytes to break down the sclerosed areæ in the middle of which the *Sp. pallida* loves to entrench himself. When these fibroid-tissue strongholds are opened out, so to speak, the *Sp. pallida* is laid bare, free to get into the circulation, unprotected, therefore, from the arsenic which shatters him. The rôle of the mercury is to prevent the *Sp. pallida* from proliferating—to hold the enemy down, as it were. It is obvious that arsenic cannot be kept in the circulation the whole of the time. So we deal the *Sp. pallidæ* one smashing blow by the intravenous injection of a large quantity of an arsenic-containing compound. At the same time the patient is injected with mercury, which keeps the *Sp. pallida* in check until we can deal him another formidable blow.

Mercury, however, appears to be much more efficacious, much more readily absorbed, when it is given intramuscularly, in combination with the intravenous injection of an arsenobenzol preparation, than when it is given by the mouth. So that it sometimes happens that we cannot give this drug as regularly as we should like to do. Naturally one examines the gums before giving an intramuscular injection, and if there be signs of mercurial toxicity we omit one or more doses, as the case may be. The patient should, however, be instructed to clean the teeth thoroughly night and morning, and he should be advised to obtain the assistance of a dental surgeon where this is necessary. By these means we can often carry our patient along with the mercury, where otherwise it would not have been possible so to do.

So far, in my own practice, all primary cases treated with novarsenobillon according to the above table have yielded negative reactions at the completion of the course, and up to the present time this condition has been maintained, although examinations are made every three months. In the case, however, of any patient whose blood serum tested at the completion of the course proves positive to the Wassermann test a second course is given, after allowing an interval of four weeks to elapse between the last injection and the resumption of intravenous medication. This interval should be utilised by the administration of iodide of potassium. The following is an illustrative and typical case:—

A woman, 30 years of age, came to me complaining of a sore-throat in August, 1916. She gave a history of having suffered from an ulcerated mouth three months previously, and of having been under medical treatment without much relief. Upon examination the palate and fauces were found to be covered with superficial ulceration and the tonsils with typical syphilitic ulcers. No genital sore was remembered. The Wassermann was strongly positive, and the patient underwent a course of novarsenobillon, as indicated by the table given above. The throat cleared up after the first three weeks of treatment. The injections of mercury were, however, not well borne, and the patient having refused further intramuscular injections was put on tablets hyd. c. creta gr. 1 t.d.s.

At the end of the course the complement reaction was weakly positive, and a further course was commenced after a month's interval, during which iodide of potassium was given in 10 gr. doses thrice daily. At the conclusion of the second course, which was steadily worked through to the end, a blood specimen was sent to Charing Cross Hospital and a complete negative obtained. Since then three other specimens have been sent, all with the same negative result. The patient shows no signs whatever of syphilis.

The effect of the intravenous injection of arsenobenzol preparations upon the secondary manifestations of syphilis is, in many instances, little short of marvellous, the lesions melting away under its influence like snow before the sun. The following case, which is of recent date, actually being under treatment at the present time, well illustrates this:—

A woman, aged 33, first saw a rash in August last. She consulted me on Nov. 23rd, complaining of ulceration of the mouth and throat. On examination the buccal mucous membrane was found to be the seat of extensive superficial ulceration (mucous tubercles) rendering the act of mastication so difficult that the patient had been compelled for some time to live on liquids and soft foods. The pharyngeal wall was dry and glazed, the tonsils and fauces ulcerated, the breath very fœtid. The patient had been taking tablets of hyd. c. creta gr. 1 thrice daily for two months, notwithstanding which the local condition of the mouth was, according to her statement, rapidly becoming worse. On Nov. 25th the patient was given 0·45 g. of novarsenobillon intravenously, and an intramuscular injection of 1 gr. of mercury. On the 28th inst. the patient came for a second injection, when the ulceration of the mouth and throat was markedly better, so much so that she began to eat solid food, and on Dec. 2nd she was given a third dose of novarsenobillon according to the table set forth above. By the 13th—that is, 18 days after the first injection—the buccal mucous membrane was perfectly healed, the tonsils were free from ulceration, and the mouth apparently quite normal. There was no offensive odour of the breath; the patient was eating ordinary food.

These cases could be multiplied almost indefinitely.

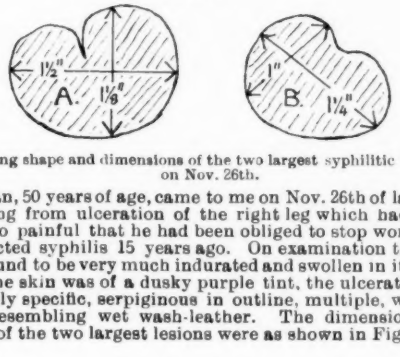
Up to the present my experience of the new arsenobenzol preparations has been confined to novarsenobillon, and although there have been adverse reports upon some of the others, I have no reason to doubt that, properly used, they are equally efficacious.

The effect of this preparation on tertiary syphilis is also very rapid, as shown by the following cases:—

A man who contracted specific disease 20 years ago was, after many attempts, finally persuaded to undergo a course of intravenous medication, and injections were commenced last June. At this time he was the subject of extensive tertiary ulceration of the skin, which covered a good proportion of the upper gluteal region and the loin of one side. He had attested under the Derby scheme in 1915, but was rejected as medically unfit. At the end of the third intravenous injection of novarsenobillon he was apparently quite well. The skin was perfectly healed, a staining of its surface being the only reminder of the former extensive ulceration. He refused further treatment until after the war on the ground that the remedy was curing him too rapidly, and that if he underwent any further injections he would on re-examination certainly be drafted into the Army.

A woman, 42 years of age, consulted me on Nov. 23rd, 1917, for a sore tongue. The history showed that she had had several miscarriages, the last occurring nine years ago, and that she had first noticed a swelling on her tongue about 12 months before coming to see me. The condition had steadily got worse, and a sore had appeared which was progressively increasing in size. On examination there was an ulcer 1¼ inches long, ½ inch wide, and 7/16 inch deep, occupying the anterior portion of the tongue. It was evidently an old gumma which had broken down. Eating ordinary food was very difficult, and the patient had become pale and emaciated, chiefly owing to her inability to take proper nourishment. The Wassermann test was done at Charing Cross Hospital, and was strongly positive. The first injection was given on Nov. 26th. On the 29th, when she appeared for the second injection, it was noticed that she was somewhat jaundiced, and exhibited other signs of arsenic intolerance. Consequently, the injection, then due, was omitted, but was given on Dec. 2nd, and the course has been continued normally up to date. By the 30th the ulcer had quite healed and the patient had gained 7 lb. in weight, and could eat as well as ever.

FIG. 5.



Showing shape and dimensions of the two largest syphilitic lesions on Nov. 26th.

A man, 50 years of age, came to me on Nov. 26th of last year suffering from ulceration of the right leg which had lately been so painful that he had been obliged to stop work. He contracted syphilis 15 years ago. On examination the limb was found to be very much indurated and swollen in its lower half, the skin was of a dusky purple tint, the ulceration was typically specific, serpiginous in outline, multiple, with the base resembling wet wash-leather. The dimensions and shape of the two largest lesions were as shown in Fig. 5, A, B.

There were besides these principal lesions three other punched-out ulcers. The patient was given the first injection of novarsenobillon on Nov. 27th, and the course was followed as usual. By Dec. 3rd the leg was so much better that the patient resumed work; by the 23rd the ulcer marked B was wholly healed; on the 30th all that was left of the ulcer marked A were two shallow granulating surfaces, the exact dimensions of which were as shown in Fig. 6.

FIG. 6.

Showing actual size of the two shallow granulating surfaces, all that was left of the ulcer A on Dec. 30th.

The patient is, of course, still under medical care. No local treatment of the affected part was undertaken other than bathing the ulcers with warm water and the application of vaseline. Neither did he go to bed, except in the ordinary way, during the time he was unable to work.

In tertiary, chronic cases, and any others which still give a positive Wassermann reaction at the end of the second course, it is as well to repeat short courses of treatment, similar to that given from the sixty-ninth to eighty-third day, at intervals of one month, giving during these periods of rest iodide of potassium.

Modification of the above Course.

Before commencing a series of injections the patient should be thoroughly examined and the urine tested. If this be found to contain much albumin it is well to reduce the initial injection to 0·3 g., which is a very safe "feeling" dose, and carefully to watch results. But if the quantity of albumin be only slight, then it is better to commence as usual with 0·45 g., because albumin is often syphilitic in origin, and disappears after the first one or two injections.

It is wise, also, to begin with 0·3 g. in the following cases: (1) Severe visceral disease; (2) aneurysm; (3) gummata of brain—and not to repeat the dose before the lapse of one week.

Tabes and general paralysis also call for lessened doses. One must in these cases begin with 0·3 g. of novarsenobillon, and cautiously increase the dose up to 0·6 g., giving the injections, however, about every four days, until some 7·5 g. have been given altogether for one course.

On the other hand, the following diseases of the central nervous system: (*a*) syphilitic meningitis; (*b*) meningomyelitis—require vigorous treatment with full doses of the preparation. If this be done the results will often appear almost magical.

Each time a patient presents himself for an injection the practitioner should take stock of him generally. If he be jaundiced or complain of feeling ill, of anorexia, of abdominal pain, of suffering from headache, of losing weight, or of any other symptom of arsenical intolerance, then give him a rest by excusing one or two injections and making it up afterwards. It is not often, however, that one has to do this.

Arsenic at times, though very rarely, produces certain rashes—e.g., urticaria, erythema, exfoliative dermatitis—some of which make their appearance about the second week of treatment—that is, after the patient has had a fairly severe test with the arsenobenzol preparation. This is one of the reasons why the patient is given a rest during the second week. It affords the doctor an opportunity of noting any idiosyncrasy the patient may have to arsenic. If these rashes occur one must certainly discontinue the treatment, and it ought not to be resumed until two weeks have elapsed since the complete disappearance of the rash; likewise, on the resumption of treatment it will be necessary to proceed with more than usual caution—that is to say, by lessened doses or by longer intervals between the injections.

In conclusion, the writer is fully aware that there are many points, only lightly touched upon, which really deserve much more attention than the limits of space have permitted. Notably is this the case with the injection of mercury, its technique, site, &c. The treatment of the rashes which occasionally—fortunately, however, only very seldom—follow the injections of arsenobenzol compounds would of itself take up sufficient space for a separate article. Still, it is hoped that the general practitioner will have found much practical help in the treatment of his cases of specific disease from the perusal of this paper.

Finally, my best thanks are due to my old teacher, Colonel Mott, for kindly reading the manuscript of the article and for many valuable suggestions. Also to Lieutenant-Colonel Harrison for much information derived from his lectures.

CENTRAL COUNCIL FOR DISTRICT NURSING IN LONDON.

THE third annual report of the council for the year ended Dec. 31st, 1917, is being presented at the annual meeting to be held in the Conference Hall of the Local Government Board on Tuesday, Feb. 26th, at 2.30 P.M., and fully justifies the decision of the council to proceed with their work notwithstanding the conditions incident to a state of war. The response of the district nursing associations to the appeal for revision of their rules so as to facilitate the nursing of infectious diseases has resulted in systematic arrangements for the nursing of measles throughout the metropolis, which were at the close of 1917 incomplete in only two of the London boroughs. Provision for the nursing of whooping-cough is progressing, but is not so complete. Progress has been less satisfactory in regard to ophthalmia of the newly born, although several of the boroughs have included it in their approved schemes, and a special memorandum on the subject has been issued, of which the following is a summary.

During the past year a donation of £250 has been received from the London parochial charities, to be expended in promoting district nursing in cases of ophthalmia which cannot be removed to a hospital for indoor treatment. In allotting a grant the council made it a condition that the district nursing association should employ nurses who had received special instruction in ophthalmic nursing, and only eight of the associations failed to satisfy this condition. Some lack of uniformity showed itself in the standard of special instruction given, and in any future distribution of grants a minimum training is suggested, comprising one week's instruction in the out-patient department, one week in the wards, and attendance at a series of lectures, such as is given at the Royal London Ophthalmic Hospital in City-road. In the more serious cases of ophthalmia the sooner mother and child can be removed to a hospital the better will be the prospect of saving the eyes. The Metropolitan Asylums Board have recently decided to provide two hospitals for this purpose, one on the north side of the Thames and one on the south side. This provision will not, however, remove the need for district nursing owing to the reluctance of many of the mothers to be removed from their homes.

A directory of district nursing has been prepared and is now complete.[1] It contains a list of nearly 20,000 streets and places in London, including practically every court and alley, indicating for each the sanitary authority, the Poor-law authority, and the provision for district nursing. The council recommend the establishment of a register of district nurses available to work for a portion of a year as emergency nurses in times of epidemic or other exceptional sickness. This proposal, if carried into effect, will ensure the better distribution of nursing throughout London, and prove especially useful to the smaller associations. The need of visiting nurses for persons of limited income is also dwelt on in the report, as also the desirability of ascertaining what areas of London are at present unprovided with adequate district nursing.

Since the war began the average cost of a district nurse in London has risen from £110 to about £130 a year. This has pressed hardly on the nursing associations generally, and, in particular, has left them with a serious increase in the cost of supplying nurses to the London County Council treatment centres, at which the remuneration of a whole-time nurse has hitherto been at the rate of £100 a year, intended to cover salary, travelling expenses, and dressings required for home treatment. The London County Council have now promised to raise the rate of remuneration to £115 per annum after March 31st next.

The most important matter likely to claim the attention of the council in the coming year is the deficient provision in London of maternity nursing, and a proposal is made for a conference on the subject to which representatives of all the public bodies interested should be invited.

[1] Copies can be obtained from the honorary secretaries, Miss A. Hughes, 16, Claverton-street, London, S.W., and Miss Z. L. Puxley, Local Government Board, London, S.W., or from P. S. King and Son, price 2*s.* 6*d.*, by post 2*s.* 9*d.*

Correspondence.

"Audi alteram partem.

GALVANOMETRIC RECORDS OF THE EMOTIVE RESPONSE TO AIR RAIDS.

To the Editor of THE LANCET.

SIR,—In November last year I communicated to the Royal Society a short paper on the Galvanometric Measurement of "Emotive" Physiological Changes, in which I reported the results of experiments made to test the principal statements made by Veraguth and by Petersen and Jung concerning the phenomenon designated by the first-named observer as the "psycho-galvanic reflex," to which my attention had been called by Dr. F. Golla. Having satisfied myself of the reality of the principal fact—i.e., of physiological changes in the skin caused by nervous discharges, usually of sufficient intensity to be subjectively associated with emotional changes of consciousness—I felt it desirable to bring the facts under record and measurement, and in view of the incredulity I had myself experienced at the outset of the investigation I felt it to be incumbent upon me to support my communication to the Royal Society by the experimental demonstration of the facts that had appeared to me to be of fundamental importance.

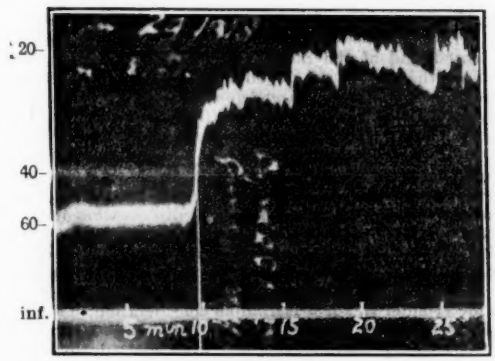
For this purpose I demonstrated at the meeting upon the subject, G. De D., the galvanometric effects of (1) an unexpected sound; (2) the threat of a burn (the striking of a match); (3) an actual burn (application of the burning match under the hand); (4) an alarming thought (an imagined air raid); (5) a painful thought (recollections of the German invasion of Belgium).

An opportunity presented itself at the end of last month of supplementing these observations by the record of the galvanometric effects upon the same subject (1) of an air-raid warning; (2) of an actual air raid, producing what may be characterised as a normal degree of emotional disturbance. The subject, G. De D., is a lady, aged 25, who may perhaps be characterised as moderately excitable. A similar record, taken upon a male subject, A. B., aged 60, during the air raid of the previous evening, Jan. 28th, is perhaps to be characterised as subnormal and in itself quite devoid of interest, since no appreciable emotive effect is to be seen on the record taken during half an hour of loud noise, during which the electrical resistance between the dorsal and palmar surfaces of the hand rose steadily from 56,000 to 68,000 ohms.

G. De D., the subject of the demonstration given last November at the Royal Society, happened to be under observation for other purposes on the evenings of Jan. 28th and 29th, when air raids, preceded by warnings, took place, and on the second occasion I obtained a complete series of half-hour photographic records of the emotive state before, during, and after the incident.

The Figure is a record of the first half-hour of the raid of Jan. 29th. The "Take shelter" signal occurred ten minutes after the beginning of the sitting, and was followed without interval by the sound of aeroplanes and of guns. As the immediate consequence of this signal the resistance fell from 56,000 to 27,000 ohms. During the subsequent 15 minutes, when the rhythm of aeroplanes (? Gothas) became audible and the noise of guns and bombs broke out, the resistance diminished further with oscillations to 20,000 ohms. Half an hour later, when the noise had ceased, a second record was taken for another half-hour, during which the resistance rose from 44 000 to 60 000 ohms. (Fall of resistance gives increased galvanometric deflection, and is shown on the record by a rising line; it will perhaps be easier for the reader to put this statement in terms of the reciprocal of resistance—viz., conductance—of conductivity, and to say that the conductance fell from 1/44,000 to 1/60,000—i.e., multiplying by one million from 23γ to 17γ. On this scale the fall of resistance from 56,000 to 27,000 and 20 000 ohms spoken of, as shown by the figure, is a rise of conductance from 18 to 37 and 50γ.) At a previous air-raid alarm (Sept. 21st, 1917) the same subject (G. De D.) exhibited a change of hand resistance of 10,000 ohms—viz., a fall from 30,000 to 20,000 ohms (or, in terms of conductance, a rise from 33γ to 50γ).

Several important inferences are to be drawn from these (and similar) results. 1. That a greater physiological change may be caused by an imaginary than by a real excitation. 2. That exogenous changes of consciousness (i.e., changes caused by known external stimuli) are attended by measurable electrical changes in the skin significant of physiological alterations. 3. That endogenous changes of consciousness (i.e., changes arising "spontaneously") are



No. 235.—Galvanometric record of Miss G. De D. during the air raid of Jan. 29th, 1918. At the tenth minute of observation the noise of maroons, immediately followed by that of aeroplanes and guns, broke out, and the resistance, which was approximately 60,000 ohms during the first ten minutes before the disturbance, fell to approximately 20 000 ohms during the next 15 minutes. (On the left hand is given the resistance in thousands of ohms.)

attended by similar electrical changes. 4. That the latter (although generally less than the former) may, under given conditions, be the larger.

In popular, if less accurate, but more generally intelligible, language it may be stated that the emotional change caused by a presumably strong excitation is temporary, not permanent, and followed by complete recovery of a normal state of mind. That the emotional disturbance due to the fear of an event may be greater than that due to the event itself.

I am at present making known the facts by lecture and by demonstration at the physiological laboratory of the University of London. And during the present month I am in attendance at the laboratory every day (inclusive of Saturday) from 2 to 6 P.M. up to, and inclusive, of Thursday, Feb. 28th, in Room No. 17A, which has been lent to me for the purpose by the authorities of the University.

I am, Sir, yours faithfully,

Feb. 19th, 1918. A. D. WALLER.

GRADUATED EXERCISE IN PROGNOSIS.

To the Editor of THE LANCET.

SIR,—Dr. Thomas Lewis's Observations upon Prognosis (THE LANCET, Feb. 2nd), to which Sir William Osler and Sir James Mackenzie have called attention in THE LANCET of Feb. 9th, contain more than one point of interest. It would have been odd if the vast experience of effort and hardship which this war has imposed on men had not taught some lessons of value to the physician and confirmed or altered conclusions based upon the still larger experience of wear and tear and their treatment in prior times. It is satisfactory to find that conceptions of the innocuousness of mechanical cardiac lesions as such, so prevalent at the commencement of the war, and owing to which many by oversight or misguided physiological views were sacrificed, have disappeared, and that the influence of gross cardiac lesions is no longer under-estimated, but that such defects are eliminated in the preliminary sifting of recruits and invalid soldiers. It is satisfactory also to find that the principle of reaction to the test of graduated exercises as an element in prognosis has been adopted on the large scale which the collection of masses of men for warfare has rendered possible. The "significance of gymnastics in the diagnosis, prognosis, and treatment of diseases of the heart," with which the late Dr. August Schott dealt in 1885,[1] and which has been

[1] Tageblatt der Versammlung Deutscher Naturforscher, &c., p. 432 et seq.

appreciated and practised by many since then, has thus found recognition and employment on a large scale. Schott handsomely concedes the initiative in the active treatment of heart disease to Stokes, of Dublin, and Broadbent also used exercise as a diagnostic in the neurasthenic or irritable heart. This particular prognosis in cardiac cases, as Dr. Lewis states, being for military service, not for the duration of life in comparatively quiet occupations, conclusions could be reached more rapidly than under the conditions of civilian life. Half of those examined seem to have been quickly eliminated, and of the remainder a moiety appear to have attained the stability and endurance capable of active service in the field, and a larger number that for employment in war service of a lower grade. After all, taking into consideration the millions with whom one has to deal in a world-war of peoples, disability chiefly due to cardiac failure has not occurred in a very large number. Dr. Lewis's statistics have to do principally with the "irritable heart of soldiers"—that is, with hearts which have little discoverable amiss in mechanism and structure, but the functional capacity or "adequacy" of which, to use a term employed for long in this connexion, is uncertain. The factors which produce tone play a large part in such, and the mental attitude of the invalided soldier is not a negligible consideration. Many a heroic story might be told of those who have returned to the front barely convalescent, and even carried their men through a great offensive when they might legitimately have been recuperating more fully at home. I have myself known instances of this among officers.

While fully appreciating the prognostic value of systematic and graduated exercises in this connexion, I confess that I have some confidence also in the results of blood-pressure estimations to which your annotator (THE LANCET, Feb. 2nd, p. 187) refers, and not altogether, I trust, from any abstract preference for abstruse calculation. There are, doubtless, as Sir James Mackenzie remarks, various conditions which influence the blood pressure, but this more recent method of "feeling the pulse," if calculated to impair the tactus eruditus of which many physicians were at one time possessed, and of which some may be said to be so still, is sufficiently simple and accurate to afford valuable information when used as a supplement to other well-known clinical methods. In connexion with obstructive and regurgitant lesions of the heart we may, for example, gauge with fair accuracy the degree or amount of such lesions by the systolic and diastolic figures, and these terms are not arbitrary and undetermined expressions, as Sir James Mackenzie appears to suggest. The particular case of arterial hypoplasia in one arm to which Sir James Mackenzie refers would rather support than depreciate the value of the hæmodynamometer as an instrument of precision. The average degree, response to exercise, and return to normal of blood-pressure measurement in a given case are therefore of value in determining the integrity and tone of the working heart; while by this method also the wax and wane of cardiac effort may be sufficiently ascertained. All methods are, however, contributory and, in their own place, useful. Some particular light may be thrown even by electro-cardiography, although the use of this method by those having little clinical experience, as is sometimes the case, leads at times to quite unjustifiable conclusions. The physician needs more than a photographic outfit.—I am, Sir, yours faithfully,

ALEXANDER MORISON.

Upper Berkeley-street, W., Feb. 19th, 1918.

POSSIBLE DEVELOPMENTS OF TRANSFUSIONS.

To the Editor of THE LANCET.

SIR,—Anyone who has carried out a series of transfusions by the multiple syringe method must be impressed by the total absence of injury to the donors. One man has given blood from the same vein upon eight occasions, and expressed himself willing to continue at intervals of 14 days for an indefinite period. The patient, too, suffers little or no inconvenience. A register of suitable donors, classified under their blood groups, is being prepared at the London Hospital in order that all cases in which transfusions are indicated may be treated without delay.

These advantages have led me to suggest that in cases of severe infection, in which the patient derives no benefit from injections of vaccine, it would be wise to obtain a donor of the same blood group as the patient and give him injections of the patient's autogenous vaccine. When an immunity has been developed a series of transfusions might be given. The dose would be multiples of 600 c.cm. and not of 10 c.cm., so that even if the concentration of the antibodies in the blood be low, nevertheless a considerable quantity would be introduced. It must be borne in mind that rabbits and horses do not develop much antibody for streptococci, but it does not follow that man, too, is unable to make these substances. The procedure is so simple that it must have occurred to many, and perhaps those who have carried it out would be willing to record their results, giving every detail, so that time need not be wasted repeating experiments if they have already proved unsuccessful.

The idea is capable of further development, and perhaps some day we shall reduce still further the mortality due to diphtheria and tetanus by having donors immunised against these bacilli and using their blood for transfusions in cases of very weak children, and when previous injections of horse serum would lead to anaphylaxis, or serum sickness to fatal results. I am, Sir, yours faithfully,

London, W., Feb. 15th, 1918. O. LEYTON.

WANTED, AN EXPLANATION.

To the Editor of THE LANCET.

SIR,—My attention has been called to an appeal for fund, now being circulated by the Medico-Psychological Clinics Limited, in order that it may deal with "the tens of thousands of our bravest heroes ..... discharged from the Navy, Army, and Air Service, useless and helpless, suffering endless torture from such maladies as insomnia, states of anxiety and exhaustion, uncontrollable emotions, ... &c." In this circular I am described as one of the two consulting physicians to the clinic.

Will you allow me to state that this use of my name is wholly unauthorised, and that only once, four years ago, have I had any relations or communication with the clinic, when I was invited by letter to join the staff and sent a written reply declining to do so.

I am, Sir, yours faithfully,

Maghull, near Liverpool, Feb. 15th, 1918. C. S. MYERS, Lieutenant-Colonel, R.A.M.C.

THE DISTRIBUTION OF THE RASH IN SMALL-POX.

To the Editor of THE LANCET.

SIR,—The critical note in Sir John W. Moore's letter in to-day's issue of THE LANCET gives one the opportunity of referring to the erroneous view which seems to have become prevalent in regard to the work of the late Dr. T. F. Ricketts on the diagnosis of small-pox. Ricketts was not the first to point out the peculiarities of the distribution of the vesicular rash of small-pox. He would have been the last to suggest that the influence of irritative conditions on the distribution of the rash was his original observation. Such observations may be found in various text-books published during the last 45 or 50 years. In fact, they thrust themselves upon the attention in every series of cases of the disease.

Ricketts's claim to distinction in his peculiar subject is founded on the brilliant deductions which he made from these observations, when he demonstrated that in *every* case of small-pox the distribution of the rash is influenced by conditions of irritation, and, conversely, that the rash in which the distribution is independent of conditions of irritation is not the rash of small-pox. In dealing with these conditions of irritation Ricketts wrote: "The operative causes are manifold, but the most potent factors are exposure to air and friction with clothing, and to their efficacy every case of small-pox is a testimonial."

If his thesis is true, it is impossible to exaggerate its importance for the diagnostician. There is no doubt of its truth, and Ricketts's claim to distinction rests on the fact that his demonstration has placed the differentiation of the vesicular rash of small-pox on a basis which is scientifically built, and has therefore reduced the possibility of failure and the consequences of failure to recognise the disease.

I am, Sir, yours faithfully,

A. F. CAMERON,
Medical Superintendent, River Hospitals and Ambulance Service, Metropolitan Asylums Board.

Joyce Green Hospital, Dartford, Kent, Feb. 16th, 1918.

The War.

THE CASUALTY LIST.

THE following medical officer appears among the casualties announced since our last issue:—

Died.

Capt. T. F. Craig, R.A.M.C., received his medical education at Edinburgh University, and qualified in 1910. He held an appointment at the Whitehaven and West Cumberland Infirmary, and was in practice at St. John's, Troon, Ayrshire, prior to joining the R.A.M.C.

CASUALTIES AMONG THE SONS OF MEDICAL MEN.

The following additional casualty among the sons of medical men is reported:—

Capt. R. P. Mackenzie, Royal Scots Fusiliers, previously reported missing and now presumed to have died on military service in April last year, elder son of the late Dr. A. F. Mackenzie, of Glasgow.

THE HONOURS LIST.

The following awards to medical officers are announced. The acts of gallantry for which the awards were made are not yet published. All are members of the R.A.M.C. unless otherwise stated. The dates in parentheses, in those cases where bars have been awarded, refer to the number of THE LANCET in which a record of the original decoration will be found:—

Second Bar to the Military Cross.—Temp. Capt. A. Fullerton, M.C. (Jan. 6th, 1917, p. 38; Oct. 27th, 1917, p. 658).

Bar to the Military Cross.—Capt. W. Fotheringham, M.C., Spec. Res. (August 25th, 1917, p. 302); Temp. Capt. W. J. Knight, M.C. (June 3rd, 1916, p. 1149); Capt. T. A. Townsend, M.C. (Dec. 2nd, 1916, p. 969); Capt. F. W. Lees, M.C., Canadian A.M.C. (Jan. 6th, 1917, p. 38).

The Military Cross.—Temp. Capt. E. P. Blashki; Capt. F. Chadwick; Temp. Capt. T. M. Crawford; Temp. Capt. W. C. Douglass; Temp. Lieut. F. B. Elwood; Capt. A. McL. Ferrie, Spec. Res.; Fourth-class Assist. Surg. J. G. Goodman, I.S.M.D.; Temp. Capt. J. H. Legge; Capt. R. D. Moore; Capt. J. G. Morgan; Temp. Capt. J. O. Thomas; Temp. Capt. P. H. Wells; Temp. Capt. E. W. G. Young; Capt. G. Young, Spec. Res.; Capt. G. M. Foster, Canadian A.M.C.; Capt. A. S. Porter, Canadian A.M.C.

The King has given permission to Miss Grace Eleanor Soltau, L.R.C.P. & S. Edin., to wear the Insignia of the Third Class of the Order of St. Sava, conferred upon her by the King of Serbia in recognition of her services to the Serbian sick and wounded in the Scottish Women's Hospitals for Foreign Service.

THE SUPPLY OF MEDICAL OFFICERS TO THE FORCES.

The Central Medical War Committee at a meeting held on Wednesday last, Feb. 20th, at the offices of the British Medical Association, passed the following resolution:—

That the attention of the Ministry of National Service be drawn to the hardships already inflicted upon the civil community and upon individual members of the civil medical profession in providing medical officers for service with the Army; and to the additional hardships which would be inflicted by any further reduction in the numbers of civilian medical practitioners. The Committee therefore requests the Government to consider whether it would not be possible, by a revision of the duties of medical officers serving with the Forces, to meet further requirements without any additional call on the medical profession available for the civil community.

The widespread belief that the medical men attached to our Armies are not economically used makes a categorical answer to this resolution very desirable.

TREATMENT OF SOLDIERS IN VOLUNTARY HOSPITALS: INCREASE IN WAR OFFICE CAPITATION GRANT.

We have received from the British Hospitals Association (14, Victoria-street, Westminster, S.W. 1) a copy of Army Council Instruction No. 144, dated Feb. 10th, 1918, authorising the raising to 4*s.* 9*d.* (as from Oct. 1st, 1917) of the maximum daily grant for soldier patients under treatment in civil established hospitals. This concession is the result of a conference held at the Westminster Hospital on Oct. 19th last, when a deputation was appointed to meet the representatives of the War Office. A joint committee was appointed to investigate the matter, and on their recommendation a substantial increase in the capitation grant was conceded, as well as a grant of 6*d.* per diem for each noccupied bed.

OBITUARY OF THE WAR.

JOHN McCRAE, M.D. TORONTO, M.R.C.P. LOND.,

LIEUTENANT-COLONEL, CANADIAN ARMY MEDICAL CORPS; CONSULTING PHYSICIAN, B.E.F.

Lieutenant-Colonel J. McCrae, who died in France on Jan. 28th of pneumonia at the age of 45 years, was born at Guelph, Canada, second son of Lieutenant-Colonel David McCrae. Educated at Guelph and Toronto University, he graduated in medicine in 1898, and was appointed in the following year Governors' Fellow in pathology at McGill University, where he became in succession lecturer in pathology and medicine. His clinical experience was obtained from his position as assistant physician to the Royal Victoria Hospital and physician to the Alexandra Hospital, Montreal, and his deep acquaintance with both sides of medicine made him a valued writer in Osler and McCrae's "System" and in association with Professor J. G. Adami on pathology. At the outbreak of war he left Canada in September, 1914, with the Canadian Field Artillery, becoming in the following summer second in command of the McGill Hospital Unit. He had just been appointed to the command of a Canadian General Hospital, and at the same time a consulting physician with the British Expeditionary Forces, when he fell a victim to a sharp attack of pneumonia, which proved fatal on the sixth day. A distinguished pathologist, an acute and accurate clinical physician, an administrator and no mean poet, Colonel McCrae leaves behind him an irreplaceable gap in a large circle of friends. A memorial service for him was held at the Royal Victoria College, Montreal, on Feb. 5th, Sir William Peterson, principal of McGill University, delivering an address.

GEORGE STEPHENSON ELLIOTT, M.B., B.S. MELB.,

MILITARY CROSS;
CAPTAIN, AUSTRALIAN ARMY MEDICAL CORPS.

Captain G. S. Elliott, who was killed in action in France at the age of 32 years, was born at West Charlton, Victoria, the son of the late Thomas Elliott, of Ballarat, and was brother of General H. G. Elliott, A.I.F. Educated at Ballarat College, he distinguished himself in both study and sport, becoming dux of the school and gaining the Wanlis gold medal for the best all-round athlete. He studied medicine at Ormond College, Melbourne University, graduating M.B., B.S. in 1915 while still keeping up his athletic record. He was winner of the 100 yards University championship and obtained a double blue for athletics and football. He left Australia shortly after qualifying, working in a field ambulance until he was posted as R.M.O. to a battalion. For his services in this position he was awarded the Military Cross. Few officers enjoyed a greater popularity, and his early death has cut short a brilliant career. Captain Elliott leaves a widow and child.

JOHN FERGUSON PALLING, M.D., C.M. TORONTO,

CAPTAIN, CANADIAN ARMY MEDICAL CORPS.

Captain J. F. Palling, who died on active service on Jan 31st, was 55 years of age, and born in Simcoe Country, Ontario. He graduated in 1888 at Trinity College, Toronto (now merged in the University of Toronto), and spent the greater part of his life in general practice at Barrie, Ont. In February, 1916, when the Canadian Infantry Battalion was raised, he joined it as medical officer, accompanying it overseas last May. After being for a time with the Reserve Brigade, he became attached to the Canadian Special Red Cross Hospital at Buxton. Symptoms of cerebral thrombosis showed themselves in November last, and he was admitted to the Queen Alexandra Military Hospital, Millbank, where he died two months later. His widow survives him.

WORK OF THE AMERICAN RED CROSS IN FRANCE.

The Commissioners of the American Red Cross in France have taken an enlightened view of their function and are making a serious contribution to scientific research in medicine and surgery under war conditions. A research committee has been appointed consisting of the following officers of the Medical Reserve and Red Cross:—

Captain Walter B. Cannon (chairman), Major Joseph A. Blake, Major G. W. Crile, Major H. Cushing, Colonel M. W. Ireland, Major Alex. Lambert (chief surgeon of the American Red Cross in France), Dr. James A. Miller, Major H. T. Nichols, Major Richard P. Strong, Dr. Homer Swift, Captain Kenneth Taylor (secretary), and Dr. William C. White;

the office of the committee being at 6 rue Piccini, Paris XVI. There have already been practical developments in several directions.

A Central Research Laboratory.—The first result is the establishment of a central research laboratory under Captain Taylor at the Red Cross Military Hospital No. 2 (6 rue Piccini), which will coöperate with the present laboratory under the Goelet Fund. Workers from other military hospitals are invited to utilise this laboratory for the completion of research requiring special facilities, the offer being made to English and French as well as to American Army medical officers.

A Research Society.—Meetings once a month have been arranged of a research society to provide opportunity for exchange of view to men engaged in various scientific investigations. The first session of the society was held on Dec. 11th and 12th last, Major Lambert presiding, and was devoted to a consideration of gas gangrene. Colonel Cuthbert Wallace, R.A.M.C., opened the discussion, presenting the clinical picture of the condition, Captain H. Henry and Major J. W. McNee following with the bacteriology and microscopic anatomy. Médecin-Principal M. E. Sacquépée presented a further paper dealing with the pathogenic properties of the gas bacillus and the serotherapy of the disease. Captain Taylor and M. Weinberg, of the Pasteur Institute, continued the discussion. On the second day trench fever was dealt with by Major McNee, Major Strong, U.S.R., Major Swift, U.S.R., Major Roger Lee, U.S.R., and others. Major Blake made the announcement that a special committee had been appointed to undertake the study of trench fever in coöperation with the British medical officers.

The Medical Bulletin.—A third outcome of the work of the committee has been the monthly issue of a medical bulletin, printed in Paris by Masson et Cie and available gratis for the physicians and surgeons of the American Army in France, as well as for any of the Allied medical officers who apply for it. The *Bulletin* is the official organ of the Research Society, and its third number contains a detailed report of the December session. It contains abstracts of articles appearing in the French, English, and American journals, but no original articles, for fear, it is stated, of preventing the publication of such articles in standard medical journals, which would assure them a more permanent record. To complete the Bureau of Medical and Surgical Information a library of current medical journals has been established at the office of the *Bulletin* (6 rue Piccini). The first three issues of the journal (November, December, 1917, and January, 1918), which are before us, deal specially with gas gangrene in its various aspects, trench fever, scabies, the louse problem, and tetanus.

The American Red Cross is to be congratulated on its broad-minded enterprise, which is likely to earn its own reward.

AN INVESTIGATION OF SHOCK.

In spite of much careful work on the subject finality has hitherto not been reached in regard to the mechanism of "surgical shock" and the means for its alleviation. An important memorandum entitled "Surgical Shock and Allied Conditions" was issued by the Medical Research Committee a year ago, and in August last a strong special committee was selected to coördinate further inquiries. The personnel of this Special Investigation Committee was as follows: Professor E. H. Starling, F.R.S. (chairman); Professor F. A. Bainbridge; Professor W. M. Bayliss, F.R.S.; Professor W. B. Cannon (Harvard University); Lieutenant-Colonel T. R. Elliott, F.R.S., R.A.M.C.; Captain John Fraser; Professor A. N. Richards, Ph.D. (University of Pennsylvania); Professor G. S. Sherrington, F.R.S.; Colonel Cuthbert Wallace, C.M.G.; Dr. H. H. Dale, F.R.S. (secretary).

A series of special reports is being issued by this committee for the help of other workers in the field, and of these there are already available: (1) Intravenous Injections to Replace Blood, by Professor W. M. Bayliss; (2) Investigation of the Nature and Treatment of Wound Shock and Allied Conditions, by Professor W. B. Cannon (Captain, U.S.R.); Capt. E. M. Cowell, R.A.M.C.; Captain John Fraser, R.A.M.C.; and Captain A. N. Hooper, R.A.M.C.; (3) The Use of Intravenous Injections of Gum Acacia in Surgical Shock, by Captain Hamilton Drummond, R.A.M.C., and Captain E. S. Taylor, R.A.M.C.

We hope to comment in an early issue on the important work here presented.

MAN POWER AND THE ARMY DENTAL SERVICE.

The Committee on Army Dental Service under the chairmanship of Mr. D. F. Pennefather has issued a report and made certain recommendations which we think should receive the earnest attention of those responsible for organising the medical services for the war. The committee's recommendations briefly stated are: (1) That a greater number of qualified dental surgeons should be employed for the treatment of the troops; (2) that a larger number of specially skilled dental surgeons should be detailed for the treatment of jaw wounds; (3) that dental surgeons should be withdrawn from combatant and other non-combatant services and detailed for dental duties; (4) that the general organisation of the dental service should be under the direction of one or more experienced dental surgeons under the orders of the Director-General of the Army Medical Services. The last is by far the most important suggestion, and we are sure if it were acted upon that the inadequacy and somewhat indifferent working of the dental service would be efficiently dealt with.

We notice that Mr. Macpherson, in a reply to Mr. Pennefather, stated that men before being sent on foreign service were examined to see if dental treatment was required, and that such treatment, when necessary, was carried out by dental officers. In theory this may be so, but experience has shown that this examination is not always properly carried out, partly probably owing to overwork of the dental officers, and partly to a lack of proper supervision of the work of those officers. For each command in this country there is a dental adviser, but it is essential, if this office is to be efficiently filled, that men of considerable experience should be appointed and men whose judgment can be trusted.

ARTIFICIAL LIMBS.—Not much has been heard of Mr. John Hodge's intention to establish a National Experimental Laboratory for designing and controlling the manufacture of artificial limbs. But the appointment of an Advisory Council to assist the Ministry of Pensions in regard to the supply of limbs and appliances to disabled sailors and soldiers may be regarded as a step in the right direction. The names of the Council are:—

Sir Charles H. Kenderdine, Chairman, Director of Artificial Limb Supplies; Surgeon General Sir W. H. Norman, Admiralty; Surgeon-General Sir M. W. Russell; Colonel T. Openshaw; Colonel Sir Robert Jones; Mr. E. Muirhead Little; Surgeon-General Sir William Macewen; Colonel C. W. Cathcart; Colonel W. L. de Courcey Wheeler; Lieutenant-Colonel J. Lynn Thomas; Mr. F. G. McGuire; Mrs. Harold E. Yarrow; Mr. D. Robinson, representing Munitions Inventions Department; Mr. W. R. Grossmith, representing British Limb Makers' Association.

Representatives have also been appointed as follows from the Overseas Medical Services:—

Colonel Murray MacLaren (Canada); Surgeon-General Sir N. R. Howse, V.C. (Australia); Lieutenant-Colonel H. T. D. Acland (New Zealand); and Lieutenant-Colonel E. N. Thornton (South Africa).

We may suppose that this Council will form the directorate of the Experimental Laboratory.

THE ELSIE INGLIS UNIT.—The Elsie Inglis Unit of the Scottish Women's Hospitals, which is about to leave for the Eastern Front, was inspected by the King and Queen on Feb. 18th at Buckingham Palace. The unit will be attached to the Jugo Slav Division of the Serbian Army, and has been specially raised to carry on the work among Serbian soldiers with which Dr. Inglis was so nobly associated.

The 25 members of the unit are women, and include Dr. Annette Benson, Dr. Lilian Chesney, and Dr. Gladys Ward, and an anæsthetist. They will be accompanied by a transport corps and eight motor ambulances. The unit is designed to serve a mobile hospital of 100 beds.

THE resignation of Mrs. A. M. Chalmers Watson, C.B.E., M.D., as Chief Controller of the Women's Army Auxiliary Corps is officially announced in the *London Gazette*.

Medical News.

UNIVERSITY OF BRISTOL.—At examinations held recently the following candidates were successful:—

FINAL EXAMINATION FOR THE DEGREES OF M.B., CH.B.

Part I., including Forensic Medicine and Toxicology.—Elizabeth Casson and Arthur Denis Symons.

Part I. only.—Bernard Archibald Astley-Weston, Alan Gabriel Bodman, and Reginald Frank White.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—An ordinary meeting of the Council was held on Feb. 14th, Colonel Charters Symonds, Senior Vice-President, being in the chair.—In accordance with a report from the Court of Examiners it was resolved to grant diplomas of Membership to 80 successful candidates.—It was resolved to grant, in conjunction with the Royal College of Physicians of London, diplomas in Public Health to two successful candidates.—It was resolved to open the Begley Studentship to women students on the same terms as to men.—The desirability of omitting biology as at present required from the First Professional Examination was discussed, and the matter was referred to a committee to consider and report.—A letter was read from Colonel W. T. Lister, A.M.S., stating that through illness he would not be able to give his Hunterian lecture on Feb. 25th. Leave was given to Colonel Lister to postpone his lecture till Wednesday, May 8th.—The Secretary reported that, in pursuance of the provisions of the new by-laws, the date of the next Council election would be announced by advertisement and by circular on March 8th, and that March 18th would be the last day for the nomination of candidates.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.—The Morison lectures on Certain Disorders of the Sympathetic and Para-sympathetic Systems will be delivered by Dr. J. J. Graham Brown in the hall of the College, 9, Queen-street, Edinburgh, on Monday, Wednesday, and Friday, March 4th, 6th, and 8th, at 5 P.M.

ESSEX COUNTY MEDICAL OFFICER.—In January 1917, the Essex County Council appointed a committee to consider the duties of the county medical officer of health and the organisation of the public health department and the medical services of the council. The committee reports that it has now given careful consideration to the matter and, in view of the fact that a large number of the younger members of the medical profession are at present serving in the Army, decided that the present is not a suitable time for appointing a new county medical officer of health and bringing into effect the administrative changes which the county council contemplates when the new appointment is made. Under these circumstances the committee suggests that Dr. J. C. Thresh shall continue to perform the duties of county medical officer for the time being.

ST. MARK'S HOSPITAL.—The Lord Mayor of London, who was accompanied by the Sheriffs, presided at the eighty-second annual meeting of St. Mark's Hospital for Cancer, Fistula, and Other Diseases of the Rectum, City-road, on Feb. 14th. Referring to the vacant site adjoining the hospital, and to the fact that that site was now for sale, the Lord Mayor heartily commended the efforts being made by a few of the subscribers to secure it for the purposes of the hospital. If this was to be accomplished a balance of £4000 would be required by April 1st. If the site could not be so purchased, and if later a factory were erected thereon, the hospital would suffer in the matters of light, air, and quietude. Mr. F. Swinford Edwards, Mr. T. M. Merriman, Dr. A. W. Oxford, Mr. Lockhart Mummery Colonel Powney, Mr. J. A. Brewin, and Mrs. Merriman referred to the grand opportunity now presented to the hospital to extend and improve its work by the acquisition of the vacant site. The hospital is registered by the War Office for the treatment of sick and wounded soldiers suffering from the special conditions, and all the patients so far received have been discharged cured, some having been in the wards as long as four months.

FURTHER PROVISION OF ALLOTMENTS.—In a circular dated Feb. 13th addressed to local authorities from the Food Production Department Sir Arthur Lee states that the food situation is now graver than it was last year and appeals for immediate further increase in the number of allotments. The produce from 16 ten-rod plots should, he says, be sufficient to supply 100 people with a daily ration of half a pound of vegetables throughout the year. Much depends on redoubled effort by the small cultivators of the land.

ANTARCTIC MEDALS.—The King has approved of the Polar medal with clasp inscribed "Antarctic 1914–1916" being granted to Captain A. H. Macklin, R.A.M.C., and Lieutenant A. McIlroy, R.A.M.C., surgeons to the Endurance Party in the Imperial Transantarctic Expedition. Captain Macklin, who graduated M.B., Ch.B. University of Manchester in 1912, was senior house surgeon at the Blackburn Infirmary at the time of his appointment to the Shackleton Expedition, and Lieutenant McIlroy, who graduated M.B., C.M. Edin. in 1894, was surgeon-superintendent at the Totara Hospital, Ross, N.Z.

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the committee, held on Feb. 12th, 19 cases were considered and £198 voted to 18 of the applicants. The following is a summary of some of the cases relieved:—

M.B., C.M. Aberd., aged 67, who practised in India and Africa, and acted as ship's surgeon; married. Has recently had a stroke, which has affected his left side, and is quite unable to work. Only income interest on £70 invested. His wife is now trying to obtain some employment. Has three daughters, all married, and unable to help. Voted £26 in 12 instalments and referred to the Guild.—Widow, aged 51, of M.R.C.S. Eng. who practised at Stalham, Norfolk, and died in April, 1917, from tuberculosis. There were seven children, three of whom have died from tuberculosis. The eldest son, aged 22, is a lieutenant in the Army. The remaining three children are very delicate. Only permanent income £15. Applicant has recently had to give up post as bookkeeper, so as to enable her to look after the children. Wants help towards the education of the youngest boy, aged 12. Voted £5 and referred to the Guild.—Widow, aged 40, of M.B. Irel. who practised at Hampstead and died in 1908. Applicant was left without means and one daughter, now aged about 16, who is at a boarding school. Friends assisted her to establish a nursing home on the East Coast, but owing to the war and air raids had to give it up in 1915. Since then she has had several posts, but owing to indifferent health has been unable to continue. She is now looking for light employment. Voted £5 and referred to the Guild.—Orphans, boys 17 and 16, girl 12, of L.R.C.P. Glasg. who practised near Manchester and died in 1917. Mother also dead. Father died leaving a large number of debts and no provision whatever for the children. Friends are endeavouring to collect money to provide these children with a suitable home and education, and application has been made to the Fund for assistance. Voted £25 and referred to the Guild.—Daughter, aged 56, of F.R.C.S. Eng. who practised at Biggleswade and died in 1890. Applicant has very indifferent health and unable to earn her living. Relieved 12 times, £100, and receives help from the Guild. Voted £12 in 12 instalments and referred to the Guild.—Widow, aged 69, of M.R.C.S. Eng. who practised in London and died in 1893. Applicant is crippled and quite helpless. Income, rent of one house, £44; this is taken up by paying mortgage. Earns a little by painting. Relieved three times, £34. Voted £12 in 12 instalments.—Daughter, aged 55, of M.R.C.S. Eng. who practised at Hadleigh, Suffolk, and died in 1877. Income from dividends £18 and from another charity £21, and has to pay 10s. a week rent. Has indifferent health, and owing to the high cost of living unable to manage. Relieved twice, £14. Voted £12 in 12 instalments and referred to the Guild.—Daughter, aged 61, of M.R.C.S. Eng. who practised at Box, Wilts, and died in 1894. She is one of three sisters, two of whom receive some help from the Fund. They are all in a delicate state of health. Applicant receives £18 a year as a companion, and is the only one of the three sisters earning. She receives £12 a year from another charity. Relieved four times, £66. Voted £18 in 12 instalments.—Widow, aged 55, of M.R.C.S. Eng., who practised in Wiltshire and died in 1914. Applicant was left entirely without means with one daughter, now aged 24, who is unable to help. Applicant is now working as a domestic help at a very small wage. Relieved five times, £40. Voted £12 in 12 instalments.—Widow, aged 64, of L.R.C.S. Edin. who practised in Liverpool and on the West Coast of Africa and died in 1907. Lives in North Wales, and lets room, whenever possible. Has two sons abroad, who are in delicate health and unable to assist her. One daughter, who lives at home. No income. Has to pay £13 a year for rent. Relieved six times, £72. Voted £12 in 12 instalments.

Subscriptions may be sent to the acting honorary treasurer, Dr. Samuel West, at 11, Chandos-street, Cavendish-square, London, W. 1.

THE Royal Dental Hospital has received a gift of Canada 3½ per cent. Registered Stock to the value of £500 from the executors of the late Mrs. Gore-Lloyd.

Professor David Drummond has been elected President of the University of Durham College of Medicine in place of the late Sir George Hare Philipson.

THE third meeting of the session of the Shakespeare Association will be held at King's College, London, on Friday, March 1st, at 5 P.M., when Dr. Ralph W. Leftwich will read a paper on "Doctor John Hall, Shakespeare's Son-in-law."

Obituary.

WILLIAM JOSEPH SEWARD, M.B. LOND., M.R.C.S. ENG.,

LATE MEDICAL SUPERINTENDENT, LONDON COUNTY ASYLUM, COLNEY HATCH.

Dr. William Joseph Seward, who died at his residence, Chandos Avenue, Oakleigh Park, Middlesex, on Feb. 11th, was educated at University College, London, and qualified as M.R.C.S., L.S.A. in 1875, graduating as M.B. Lond. in the following year. After holding house appointments at Bristol General Hospital, he became medical superintendent at Colney Hatch Asylum, in succession to Dr. Edgar Sheppard, where his attention to the patients and kind consideration for their relatives gained for him deep respect and gratitude. His work before coming to Colney Hatch and at that institution under Mr. W. G. Marshall and Dr. Sheppard, whose assistant he was for some years, gave him both a general and special comprehension of the pathological condition of his charges, and he was on every count considered a very competent superintendent. The Mental After-Care Association had in him a strong supporter, for he knew how much can be done by intelligent supervision for lunacy patients discharged as recovered, and how often the absence of such supervision must culminate in recurrence or tragedy. On the occasion of the appalling fire at Colney Hatch in 1903 his personal bravery earned the admiration of all, but the tragedy was never effaced from his life, and this, no doubt, contributed to the resignation of his post two years later. He was unmarried.

We have received from Sir Robert Armstrong-Jones the following estimation of Dr. Seward's personal qualities:—

In 1882, when barely 30 years of age, Seward succeeded Dr. Sheppard as medical superintendent of Colney Hatch, the London County Council, which had assumed the government of the London (then the Middlesex) Asylums under the Local Government Act of 1890, making the appointment. He was made the administrative medical head of the whole institution, taking over the care of both the male and female sections, and thus abolishing what until then had been a dual control. The re-construction of so great an undertaking under one head was no easy task, and probably Seward was the only person who could have assumed this supreme direction for the Asylums Committee of the Council not only without friction but also with the full help and confidence of the governed. During his period of service in this institution was inaugurated the After-Care Association for the rehabilitation into social life of those patients who had been discharged recovered; and the inspiring leadership of its founder, the Rev. Henry Hawkins, the chaplain, was always a source of personal gratification to Seward. He continued throughout his life to take the deepest interest in the society's welfare, as he also did in the Asylum Workers' Association, of which he was a member of the executive committee.

One great event cast a deep shadow upon Seward's life, and he never recovered from the shock. On Jan. 23rd, 1903, a destructive fire occurred in the new wooden annexe adjacent to the main buildings of Colney Hatch, which was demolished in about an hour. In this fire 51 female patients lost their lives, and the rest were saved with difficulty. In ordinary circumstances no calamity can possibly be more tragic or more disastrous than a fire, even when every safeguard and every precaution is ready and prepared against its occurrence; but when such a catastrophe occurs in an institution in which there is a sense of helplessness among its people and a feeling of dependence on the part of those committed to one's charge, then the anguish inseparable from mental disease is added to the special claims of humanity, and these, together, tend to intensify acutely the overwhelming sense of responsibility. The disaster weighed upon Seward like a black cloud, and the tragedy was always before his mental vision, and it is not surprising that it permanently unnerved him, and some years later he was succeeded in the appointment of medical superintendent by his friend and assistant, Dr. S. J. Gilfillan.

The treatment of the insane during Seward's régime was always one of enlightened and disinterested responsibility. Alcohol, in the shape of beer, was abolished as an article of diet under Seward; the Turkish bath for restoring mental patients was first used there; organo-therapy was encouraged by him, and the aid of clinical pathology with the application of the microscope were all adjuncts in treatment which were of intense interest to Seward, and they continued to be aspects in the practice of medicine which engaged his leisure and retirement, for he was a frequent visitor at the meetings of the Royal Society of Medicine, of which he was a Fellow. Seward may be described as an "intermediary" between the old school and the new research school first started in the London County Asylum at Claybury by Sir William J. Collins, then of the Asylums Committee of the London County Council.

Seward was a Mason, a member of the London County Council Lodge. He was a keen angler and was devoted to Norway where he used to fish, and to Switzerland where he made many walking tours, and was a real devotee of cricket. He was fond of pictures, and he delighted in the cultivation of roses. He was not a great reader, but he was exceedingly well versed in contemporary history and was fond also of hearing some of the great preachers, and the writer and his family often met him at the Sunday afternoon services at Westminster Abbey. His mind was not that of the controversialist; indeed, he rather disliked debating questions, but he always expressed his opinions—which were well considered—both fearlessly and critically. His great charm was his complete detachment from bias—he had cultivated the bias of anti-bias more than any other man of my acquaintance, and he was a most genial, well-informed, and cheerful personality; he has left an impression of unique charm upon those who were privileged to know him.

THE SERVICES.

ROYAL NAVAL MEDICAL SERVICE.

To be temporary Surgeons: H. C. Apperly, G. H. C. St. G. Griffiths.

ROYAL NAVAL VOLUNTEER RESERVE.

To be temporary Dental Surgeons: G. E. Wood, J. R. Palmer, W. C. Murray, E. E. Fletcher, F. Thompson, J. F. Place, W. S. Ollis, D. Paterson, R. R. Adams, T. A. B. Corless, J. S. F. Horton, H. M. Meek, O. Trigge, S. White, T. P. Cooper, P. G. Richards, A. Lawrey, B. J. Geekie, G. Cotterell, R. S. Ward, R. W. White, A. A. Hume, S. F. Simpson, M. F. Hopson, W. F. A. Sampson, G. W. B. Holloway, A. T. Dally, A. D. Buck, G. Nicholson, O. M. Bartlett, C. R. Martin, F. Wardale, V. W. A. Bell-Bonnett, J. M. Redpath, J. H. J. Stuart.

ARMY MEDICAL SERVICE.

Col. J. J. Gerrard, C.B., to be Surgeon-General.

Lieutenant-Colonels to be temporary Colonels:—J. S. Gallie, D.S.O., whilst employed as Deputy Director of Medical Services, Lines of Communication. Whilst employed as Assistant Directors of Medical Services of a Division: J. A. Hartigan, D.S.O., H. G. Martin.

TERRITORIAL FORCE.

Lieut.-Col. C. T. Green, Casualty Clearing Station, to be Assistant Director of Medical Services, and is granted the temporary rank of Colonel whilst so employed.

ROYAL ARMY MEDICAL CORPS.

Majors relinquishing the acting rank of Lieutenant-Colonel on re-posting: J. H. Brunskill, D.S.O., G. H. J. Brown, D.S.O., B. H. V. Dunbar, D.S.O.

Major A. E. S. Irvine, D.S.O., retains the acting rank of Lieutenant-Colonel whilst in command of a Medical Unit.

To be acting Lieutenant-Colonels whilst in command of a Medical Unit: Capt. E. D. Caddell, M.C., Major J. C. G. Carmichael, Major F. M. Parry.

Temp. Lieut.-Col. H. W. Bruce, from the Southwark Military Hospital, to be temporary Major on re-posting.

Lieutenants (temporary Captains) to be Captains: W. Foot, M.C., F. C. K. Austin, D. C. Monro, E. Davies, R. E. Barnsley, T. J. Kelly, R. J. C ausen, M.C., C. McN. McCormack, M.C., G. D. Jameson, D. W. Pailthorpe, M.C., St. J. D. Buxton, E. F. W. Grellier, S. Arnott, T. L. Fraser, L. G. Bourdillon, D.S.O., M.C., (Acting Lieut.-Col.) R. A. Preston, M.C., A. B. Preston, J. Sainsbury, G. D. Robertson, H. D. F. Brand, R. Ellis, M.C., F. G. A. Smyth, J. P. Little, C. J. O'Reilly, M.C.

Temporary Lieutenants to be temporary Captains: J. Campbell, C. A. Hughes, P. K. Muspratt, J. Wyper, A. M. M. Roberts.

Second Lieut. S. Riddiough, from Unattached List, T.F., to be Lieutenant.

Officers relinquishing their commissions:—Temp. Major (Capt., R.A.M.C., T.F.) R. A. Fleming. Temp. Capts. J. F. Adamson, W. G. Ridgway, M. McNiff (on account of ill-health caused by wounds), E. B. Israel, N. W. Rawlings (on account of ill-health), J. F. Strickland (on account of ill-health), F. W. Martin (on account of ill-health contracted on active service), F. L. Keith (on account of ill-health contracted on active service), W. G. S. Neely, C. H. Treadgold, D. M. MacManus, T. W. Snaw (on appointment under the Ministry of National Service), W. R. Knightley (on appointment under the Ministry of National Service), A. B. Jones (on appointment under the Ministry of National Service). Temp. Lieuts. T. B. Smith, G. Chalmers, D. H. Groom, E. A. Edington (on account of ill-health contracted on active service), C. M. Ormsby (on account of ill-health). Temp. Hon. Lieuts. L. T. Kewer, J. H. Dorman, W. L. Hanson, J. R. Tippins.

Canadian Army Medical Corps.

Temp. Major C. F. C. Hazard, from Canadian Light Horse, to be temporary Major.

Temporary Captains to be temporary Majors: L. M. Rice, (Acting Major) W. H. Lowry, J. H. McPhedran, A. T. Henderson, A. H. Pirie, C. A. McDiarmid, G. F. Boyer, R. B. Robertson.

Temp. Capt. A. B. Chapman, M.C., to be acting Major.

Temporary Lieutenants to be temporary Captains: K. McK. Shorey, D. R. Finlayson, D. S. McCurdy, P. H. Silver.

SPECIAL RESERVE OF OFFICERS.

To be Lieutenants: C. F. J. Carruthers (from Manchester University Contingent, O.T.C.), M. O. Simpson and J. F. Twort (from University of London Contingent, O.T.C.), W. M. Kerr and W. H. Wallace (from Glasgow University Contingent, O.T.C.), A. H. Morris (from Bristol University Contingent, O.T.C.), D. F. Panton, T. G. James, Second Lieut. (Hon. Lieut.) W. G. F. Owen-Morris (from T.F. Res.).

Lieut. E. Chapelle relinquishes his commission on account of ill-health.

TERRITORIAL FORCE.

Lieut.-Col. J. S. White is transferred to the permanent personnel.

Lieut.-Col. C. T. Green is seconded whilst holding an appointment as Assistant Director of Medical Services.

Capt. C. L. Isaac to be Major.

Capt. (Brevet Major) D. W. Boswell to be acting Lieutenant-Colonel whilst commanding a Field Ambulance.

Capt. C. W. Sharpley and Capt. C. N. Chadborn are restored to the establishment.

Capt. W. D. Frazer resigns his commission on account of ill-health, and is granted the honorary rank of Captain.

Temp. Second Lieut. T. Edwards, from Labour Corps, to be Lieutenant.

Medical Officer and Temp. Capt. A. G. Reid, from 16th Battalion, West Riding Volunteer Regiment, to be temporary Major, West Riding Medical Volunteer Corps.

W. H. Helm to be temporary Captain, West Riding Medical Volunteer Corps.

INDIAN MEDICAL SERVICE.

To be Lieutenants: Jelal Moochool Shah, Rustam Merwam Kharegat, Lakshminarayanapuram Subramanier Ramier.

To be temporary Lieutenants: Shambhu Nath Aggarwal, Roshan Lal Khera, Ram Singh Sharma, Manmatha Nath Pal, Dwarka Das Khanna, Khalig Dad, Mohammad Afzal Khan, Aruldason Devasagayam, Aung Tun, Rajeswar Bhattacharyya, Kshitish Chandra Das Gupta, Sanat Kumar Palit, Ahmad Karim, Homewell Lyngdoh, Prandhan Ghosh, Asa Nand Kapur, Bishambar Nath Luthra, Naranammalpuram Swaminaiver Subramaniam, Atma Ram Khanna, Karumacheril Itty John, Manindra Chandra Datta, Chackalyil Chandy Ittycheria, Binod Bihari Hajra, Mohamed Aon Jafarey, Herbert Wilcox Knight, Ramendra Krishna Basu, Nadirshaw Dossabhoy Mullan, Amar Nath Ray Chaudhury, Rama Shankar Bhargava, Joachim Paul Menezes, Hari Dhan Banarji, Moreshvar Gopal Oka, Kiranlal Sen, Ramchandra Subbarama Iyer, Ragavam Cheruvari Toyle, Dattatraya Mangesh Mealky, Vasant Rajaram Masurekar, Gnanadickam Ira Benjamin, Byomkesh Chatterjee, Koka Venugopaul, Wallanjattil Curyan Thomas, Dattatraya Sitaram Dhavle, Austin D'Silva, Nathan Elijah, Amulya Prasad Maitra, Keshab Chandra Sen Gupta, Glanchand Bhawandas Advani, Shivshankar Vithalji Trivedi, Aswini Kumar Nandi, Krishna Venkatachalam, Enathickal John Koshi.

Major T. H. Delany retires in consequence of ill-health, retaining honorary rank.

URBAN VITAL STATISTICS.

(Week ended Feb. 16th, 1918.)

English and Welsh Towns.—In the 96 English and Welsh towns, with an aggregate civil population estimated at nearly 17,000,000 persons, the annual rate of mortality was 14·8, against 15·0 and 15·7 per 1000 in the two preceding weeks. In London, with a population exceeding 4,000,000 persons, the death rate was 14·2, or 2·5 per 1000 below that recorded in the previous week; among the remaining towns the rates ranged from 6·1 in Enfield, 6·6 in Lincoln, and 7·0 in Southend-on-Sea, to 25·1 in Halifax, 24·4 in Middlesbrough, and 29·1 in Norwich. The principal epidemic diseases caused 483 deaths, which corresponded to an annual rate of 1·5 per 1000, and included 189 from whooping-cough, 161 from measles, 64 from diphtheria, 46 from infantile diarrhœa, 16 from scarlet fever, and 7 from enteric fever. Measles caused a death-rate of 2·1 in Leeds, 2·2 in Great Yarmouth and in Leicester, 2·7 in Halifax, 3·0 in Blackburn, 6·4 in Barnsley, and 7·4 in Norwich; and whooping-cough of 1·9 in Wallasey and in Oldham, 2·1 in Carlisle, and 2·5 in Wigan. The 995 cases of scarlet fever and 1719 of diphtheria under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital were 48 below and 33 above the respective numbers remaining at the end of the previous week. Of the total deaths in the 96 towns 178 resulted from violence. The causes of 32 deaths were uncertified, of which 8 were registered in Liverpool, 6 in Birmingham, and 2 each in Blackpool and Middlesbrough.

Scotch Towns.—In the 16 largest Scotch towns, with an aggregate population estimated at nearly 2,500,000 persons, the annual rate of mortality was 12·9, against rates declining from 17·5 to 13·9 per 1000 in the four preceding weeks. The 248 deaths in Glasgow corresponded to an annual rate of 11·6 per 1000, and included 5 from measles, 4 each from diphtheria and infantile diarrhœa, and 3 from whooping-cough. The 90 deaths in Edinburgh were equal to a rate of 14·1 per 1000, and included 2 from diphtheria.

Irish Towns.—The 135 deaths in Dublin corresponded to an annual rate of 17·6, or 2·8 per 1000 above that recorded in the previous week, and included 8 from whooping-cough, 3 from infantile diarrhœa, 2 from diphtheria, and 1 each from enteric fever and measles. The 151 deaths in Belfast were equal to a rate of 20·0 per 1000, and included 7 from whooping-cough, 5 from measles, and 3 from infantile diarrhœa.

BRIGHTON DISPENSARY.—At the annual meeting of the Brighton, Hove, and Preston Dispensary on Feb. 12th it was announced that under the will of Mrs. Rose Ann Hadfield a sum of £1200 could be allocated towards the provision and upkeep of an X ray apparatus at the Carver-Burton memorial hospital wards of the Hove branch. The actual legacy amounted to £1272 17*s.* 6*d.* in addition to certain securities.

Parliamentary Intelligence.

HOUSE OF COMMONS.

TUESDAY, FEB. 12TH.

The Royal Army Medical Service.

Speaking on the debate on the Address, Sir W. WATSON CHEYNE said that every member of the Committee which was sent to France to report on the medical establishments was impressed by the splendid work which was being done by the medical officers in the Army. No one could help admiring their self-sacrifice, courage, and kindness. There were more than 5000 medical officers, and all the "wasters" could be counted on the fingers of the two hands. In regard to delays he wished to refer to the report which was sent in to the Army Council a couple of months ago in reference to the Medical Service in France. The other day, in answer to a question, it was stated that the matter was under the consideration of the Army Council. He was very much astonished to find out from a friend of his who was over in France that no copy of this report had been sent to France, although the entire report concerned the Medical Service in France. One would have thought that the first thing the Government would have done would have been to have sent a copy of the report to France in order to get the opinion of the medical authorities on it, and if they approved of any of the suggestions in the report they could have put them into force. But these suggestions could not be carried out during active operations, and therefore the whole value of that report had been lost. He was not surprised that so much time had been taken over this matter because it was a purely medical affair and there was no medical man on the Army Council. The persistent refusal of the Army Council to allow some member of the medical profession to sit upon the Army Council was a most extraordinary thing. Surely one of the most essential parts of the Army machine ought to be a medical representative on the Army Council. With regard to the Mesopotamia campaign it had been said that if the Director-General of the Army Medical Service had been a member of the Army Council when the medical arrangements were being devised, if he had been there ready to give information as to the climate and the sanitary conditions, and to give advice as to the medical preparations required for the campaign there would have been no Mesopotamia scandal. He had often wondered why the Army Council so persistently refused to allow the chief of the medical staff to sit upon that body. Did they think that a medical man could not keep secrets? One of the essential points in the medical profession was secrecy, for when qualifying one of the first things which medical men were asked to do was to take an oath of secrecy in regard to matters entrusted to them. Was it the opinion of the Army Council that medical opinion was of no value outside medicine? He need cite only one example. There were six medical men in the House and two of them were to be found amongst the members of the Government. Did the Army Council follow the old lines when the Army officer used to look down on the doctor? If that was the case he should like to ask the officers to consider what medical men had done for the Army. There was the question of typhoid fever. He remembered quite well at Bloemfontein, 18 years ago, after being there for two or three weeks, the great devastation that was wrought by typhoid fever, by a terrible epidemic, and whenever a halt of a few days was made fever began to break out again. Many more lives were lost through disease than through injuries in that campaign. Just let it be considered what would have happened in the present war if medical science had not made advances in regard to the prevention of typhoid fever at a time when we were obliged to have large accumulations of men in the trenches under most insanitary conditions. If the conditions during this war had been no better than they were during the South African War this great struggle would have ended long ago through sheer exhaustion through disease. The request that was constantly being made that the Director-General of the Army Medical Service should be a member of the Army Council could not be refused on any defensible grounds. With regard to the question of a special Medical Service for the Air Force, the Air Board quite early in its career realised that the Medical Service was very important, and appointed a committee to consider the whole matter and advise as to what should be done. Some weeks elapsed after sending in the report of the committee before the members heard anything of it, and then they found that some sort of intrigue had been going on with a view to stopping an official service. A second committee was appointed and it tried to keep the two older services in touch with the Air Service. The whole thing ended in a sort of compromise, which, he hoped, would work. A delay like that of two months was a very serious thing

in many ways. In the first place, men were losing their lives for want of a proper Medical Service, and, in the second place, during those two months officers could not be trained to cope with air illnesses and to be ready for the big offensive when it came. He did not think much of the compromise, but it would allow the Air Service to commence at once to train medical officers, and that was a great point. If the compromise broke down, then the authorities would fall back upon the original scheme. He did not think that the committee would have been justified in holding out for the original scheme and throwing out the compromise, because that would have delayed matters so much. He did hear that the intrigue was caused by somebody whose name he had fortunately forgotten. He mentioned this because he did not want it to be thought that it was started by any responsible person. He often wondered whether the gentleman who started it ever thought of the gallant and splendid young officers who had lost their lives owing to the delay which resulted.

THURSDAY, FEB. 14TH.

Dental Treatment in the Army.

Mr. PENNEFATHER asked the Under Secretary for War whether inspecting dental officers had been appointed in each command in this country; and, if so, whether they had authority to act on their own initiative or merely to report to the Deputy Director of Medical Service and to act on instructions given by him.—Mr. MACPHERSON replied: Inspecting dental officers have been employed in commands at home since December, 1915. These officers carry out their duties under the instructions of Deputy or Assistant Directors of Medical Services, who are responsible to general officers commanding for the physical fitness of all soldiers. Subject to such general instructions inspecting dental officers naturally act on their own initiative.

Mr. PENNEFATHER asked whether, according to Army Council instructions, officers in medical charge of units had to examine all men on joining to see if they required dental treatment; if so, whether such medical officers had in all cases gone through a sufficient training in dental work to enable them to perform this duty satisfactorily; and whether, in view of the Army Council Instruction 1122 of 1916, any order could be issued in any command or garrison authorising an inspection by dental officers to see if the dental inspection by the medical officer had been thorough and if his recommendations had been properly carried out.—Mr. MACPHERSON answered: The reply to all three parts of the question is in the affirmative. As regards the second, dental surgeons are available in cases of doubt, and frequently carry out inspections where a special opinion is required.

Mr. PENNEFATHER asked whether any qualified dental surgeons had been or would be put into labour battalions instead of being employed on Army dental work.—Mr. MACPHERSON wrote in reply: I know of no cases in which dental surgeons have been put into labour units, and as far as I am aware there is no intention of doing so.

Mr. PENNEFATHER asked whether any Army Order existed forbidding the transfer of dental surgeons with combatant and other commissions to the dental service.—Mr. MACPHERSON replied; There is no Army Order forbidding such transfers, but so long as dental surgeons are available for commissions from the ranks it has not been the practice to transfer commissioned officers.

Mr. PENNEFATHER asked how many British motor dental ambulances or lorries were in active operation on our various fronts; how many dental ambulances or lorries had been given or offered to the War Office; how many of such gifts or offers had been accepted and how many refused; and if any of such gifts accepted had not been used.—Mr. MACPHERSON added: Four motor dental ambulances are in active operation at the front, all in France. Five such ambulances have been offered and accepted and none have been refused. Four have been delivered and, as far as we are aware, are in use. The fifth ambulance has not yet been received.

Exchange of Prisoners with Turkey.

Answering Mr. HUME-WILLIAMS, Mr. J. HOPE (representing the War Prisoners Department) stated that no news had yet been received of the ratification by the Turkish Government of the agreement signed at Berne relative to prisoners of war.

Housing in Ireland.

In reply to Captain SHEEHAN, Mr. DUKE (Chief Secretary for Ireland) said: Information as to housing needs in Dublin and elsewhere in Ireland has been, and is being, collected by the Irish Local Government Board, and I am in communication with the Board as to the best means of dealing with the matter in the several localities. A decision has not yet been arrived at with regard to the extent of assistance out of public funds which may be required or which will be available. I agree with the suggestions as to the serious consequences attributable to defective housing conditions in Dublin and elsewhere, and am dealing with the question in consultation with the President of the Local Government Board, the Secretary for Scotland, and the Minister of Reconstruction.

Captain SHEEHAN: Is the Local Government Board for Ireland acting in conjunction with the borough councils and other urban bodies in Ireland and getting information from them?—Mr. DUKE: The Local Government Board for Ireland, at the time I took office, had a very great amount of information on this matter. They have added to that information, and they go on adding to it as far as may be necessary. The real question is not the information necessary to gauge the amount of new housing that is required, but the mode of providing the accommodation at the end of the war.

Captain SHEEHAN: Is a definite policy or a scheme going to be adopted and made known publicly, so that public bodies may know what they are going to do after the war?—Mr. DUKE: If my honourable and gallant friend had not been prevented from attending here by his other public duties he would know that I stated on several occasions that that is intended.

MONDAY, FEB. 18TH.

Promotions in the Army Medical Service.

Mr. LLEWELYN WILLIAMS asked the Under Secretary for War whether he was aware that discontent had been caused in the Army Medical Service by the late list of promotions to the higher ranks of that service, colonels and surgeon-generals, as a result of which a large number of officers, some of whom possessed distinguished records for professional work, had been passed over for promotion; whether these promotions were the result of consideration of the qualifications of the officers by an impartial and formally constituted board of senior officers; and, if so, what was the constitution of that board; if such a board was constituted, what instructions were given to it to guide it in making its selection; and, alternatively, if no such board was constituted, on what system was the selection made, and was due attention paid to scientific and professional qualifications as apart from purely administrative ability.—Mr. MACPHERSON wrote in reply: The recent promotions were made in some instances among officers who perform purely professional duties, and in others both professional and administrative capacity were duly considered. The promotions were made specially for the purposes of the war, and officers not so selected are still eligible for promotion in the ordinary course. The recommendations of general officers commanding were obtained and carefully considered, and the selections were made by the Adjutant-General in consultation with the Director-General of the Army Medical Service after exhaustive inquiry, and were finally submitted to the Secretary of State for approval.

TUESDAY, FEB. 19TH.

Welfare of the Blind.

Mr. ANDERSON asked the Parliamentary Secretary to the Local Government Board whether the proposed Advisory Committee to consider schemes for the welfare of the blind would have power to consider the taking over, consolidating, and administering of the whole of the charities and bequests given for the benefit of the blind; whether it would have power to suggest schemes for paying adequate pensions to all incapable, aged, and infirm blind persons; and whether its terms of reference would be such that it could apply to Parliament for a grant of money so to improve the income of the wage-earning blind that they might be able to live in decency and self-respect.—Mr. STEPHEN WALSH replied: The Advisory Committee has been appointed to advise the Local Government Board on all matters relating to the welfare of the blind. The particular questions referred to are matters within the competence of the Committee, and they are fully empowered to advise the Local Government Board to apply to Parliament for any grant which may be necessary to give effect to any of their recommendations.

Sugar for Invalids.

Mr. BOWERMAN asked the Parliamentary Secretary to the Ministry of Food whether he was aware that an application made by the town clerk of Deptford on behalf of a resident of that borough, whose doctor certified that his patient required extra sugar in the invalid food supplied to him, had been refused by the Ministry; and whether further consideration would be given to this and similar applications, with a view to authorising food officers to grant permits for reasonable additional supplies of sugar per week for invalids upon the production of medical practitioners' certificates.—Mr. CLYNES answered: The answer to the first part of the question is in the affirmative. Extra sugar is only necessary and only granted in cases where invalids are unable to swallow and have to be fed by tube with concentrated nourishment. The place of sugar as a condiment can be taken by glucose and saccharine.

WEDNESDAY, FEB. 20TH.

Army Medical Services.

Mr. MACPHERSON (Under Secretary for War), in the course of his statement on the Army Estimates, said that the devotion of the Royal Army Medical Corps towards the care and well-being of the men in the Army had been splendid. The large number of casualties in the commissioned ranks of the Royal Army Medical Corps showed that it did not shirk its responsibility. In the Napoleonic War the percentage of deaths from disease was 97 and deaths on the battlefield 3 per cent. Even as late as the South African War there were 60,000 cases of disease admitted to hospital and over 8000 deaths. That was to say, four times as many men died from disease in South Africa as there were cases in France up to Nov. 1st last year. Having regard to the further increase of the Army in France, the contrast was even greater. The Member for St. Andrews and Edinburgh University (Sir Watson Cheyne), than whom there was no greater authority in his own special line in the House or probably outside it, in relating his experiences in France had made it clear that though we had to deal with a stationary Army in which epidemic disease was most liable to break out and not with an advancing Army in which disease was less prevalent, yet our skill in medical science, our care and forethought, had made the amount of disease the least in the history of any Army in the world. It was fair to point out that while conditions in France were satisfactory, in other theatres of war, such as Salonica, the conditions were not so satisfactory. In summer time in Macedonia the climate was one of the most pestilential in the world, and the malaria of the most malignant type. When this was found out an energetic hygienic and sanitary propaganda was set going, including such measures as anti-mosquito and anti-fly orders, the issue of mosquito nets for soldiers, and the drainage of swampy areas which formed breeding places. The result was that the remarkable amount of sickness in the Salonica Army had been reduced in 1917 to two-thirds what it was in 1916, while the death-rate in 1917 had been reduced to one-third what it was in 1916. The success and gallantry of the Army Medical Service had given it a place in the Army it had never had before, and no one was more glad than the fighting soldier to know that the members of the Royal Army Medical Corps should be recognised as being on a level with himself. It had now been arranged that the term "Lieutenant-General" or "Major-General" should be applicable to "Surgeon-General," and in future a General of the Royal Army Medical Corps would be known as Lieutenant-General or Major-General (as the case may be) Surgeon-General of the Forces.

Sir Alfred Keogh.

No one, continued the Under Secretary, had been more responsible for the success of this branch of the Service than Sir Alfred Keogh. He would soon go back to the scientific work he loved, and he (Mr. Macpherson) took that opportunity on behalf of the Army Council, the Army as a whole, and indeed the whole nation, to acknowledge the magnificent work Sir Alfred Keogh had done during his three and a half years' strenuous patriotic service.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BENNETT, F. J., M.R.C.S., L.D.S., has been appointed Honorary Dental Surgeon to the King George Hospital, Stamford-street, Blackfriars.

JACKSON, S., Certifying Surgeon under the Factory and Workshop Acts for the Penarth District of the county of Glamorgan.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—Second House Surgeon. Salary £250 per annum, with board, &c.

BIRMINGHAM, YARDLEY-ROAD SANATORIUM AND MUNICIPAL ANTI-TUBERCULOSIS CENTRE.—Junior Assistant Medical Officer, unmarried. Salary £300 per annum, with board, &c.

BRISTOL ROYAL INFIRMARY.—House Physician and House Surgeon. Salary at rate of £120 per annum, with board, &c.

BURY INFIRMARY.—Junior House Surgeon. Salary £200 per annum, with board, &c.

CARDIFF, KING EDWARD VII.'s HOSPITAL.—Final Year Student Dresser for three months. Salary at rate of 52 guineas per annum, with board, &c.

CHILDREN'S INFIRMARY, Cleveland-street, W.—Female Assistant Medical Officer. Salary £300 per annum, with board, &c.

CORNWALL COUNTY COUNCIL.—Assistant Tuberculosis Officer. Salary £400 per annum.

DUDLEY, GUEST HOSPITAL.—Vacancy on Honorary Surgical Staff.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Resident Assistant House Surgeon.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, London, N.—House Surgeon for three months. Salary at rate of £100 per annum, with board, &c.

LIVERPOOL, SAMARITAN HOSPITAL FOR WOMEN.—Assistant House Surgeon.

MANCHESTER CITY.—Temporary Assistant Tuberculosis Officer. Salary £450 per annum. Also Female Medical Officer. Salary £400 per annum.

MANCHESTER ROYAL INFIRMARY.—Honorary Radiologist and Electrotherapeutist.

NORTH CHEAM, SURREY, ST. ANTHONY'S HOSPITAL.—Resident Doctor.

NOTTINGHAM CHILDREN'S HOSPITAL.—Female House Physician and Anæsthetist for six months. Salary at rate of £250 per annum, with board, &c.

NOTTINGHAM EDUCATION COMMITTEE.—Temporary Assistant Medical Officer. Salary £350 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Female House Physician for six months. Salary at rate of £250 per annum, with board, &c.

NOTTS COUNTY COUNCIL.—Assistant Tuberculosis Officer. Salary £500 per annum.

PRESTON ROYAL INFIRMARY.—Resident Medical and Surgical Officer. Salary £120 per annum, with board, &c.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer. Salary at rate of £60 per annum, with board, &c.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Clinical Assistant.

READING, ROYAL BERKSHIRE HOSPITAL.—Senior Resident Medical Officer. Salary £350 per annum, with board, &c.

ROCHESTER, KENT, ST. BATHOLOMEW'S HOSPITAL.—Resident Clinical Assistant. Salary at rate of £110 per annum, with board, &c.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Resident Medical Officer. Salary at rate of £300 per annum, with board, &c.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Second House Surgeon. Salary at rate of £75 per annum, with board, &c.

SALFORD COUNTY BOROUGH.—Female Assistant Medical Officer for Child Welfare. Salary £350 per annum.

SALFORD ROYAL HOSPITAL.—House Surgeon for six months. Salary at rate of £200 per annum, with board, &c.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Senior House Surgeon. Salary £300 per annum, with board, &c.

TEWKESBURY UNION.—Two Medical Officers. Salaries £30 per annum and £55 per annum respectively.

WILLESDEN URBAN DISTRICT COUNCIL.—Dental Surgeon. Salary £7 7*s.* per week.

WINDSOR, KING EDWARD VII. HOSPITAL.—Resident House Surgeon.

WOOLWICH METROPOLITAN BOROUGH.—Female Assistant Medical Officer of Health. Salary £500 per annum.

WORCESTERSHIRE COUNTY COUNCIL EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary £350 per annum.

Births, Marriages, and Deaths.

BIRTHS.

MACLAGAN.—On Feb. 8th, at Cluden, Annan, the wife of Captain P. W. Maclagan, M.D., R.A.M.C., of a daughter.

RIX.—On Feb. 7th, at Osnaburgh-terrace, N.W., the wife of Lieutenant Rowland W. Rix, F.R.C.S., R.A.M.C., of Sudbury, Suffolk, of a son.

ROE.—On Feb. 11th, at Deanhurst, Harrow, the wife of Clive Watney Roe, M.C., M.R.C.S., L.R.C.P., of a daughter.

TOWERS.—On Feb. 13th, at Ferry-road, Leith, the wife of Captain A. H. Towers, R.A.M.C., of a son.

TURNER.—On Feb. 14th, at Harley-street, the wife of Colonel Aldren Turner, C.B., M.D., of a son.

MARRIAGES.

CROMBIE—KING.—On Feb. 13th, at Brackley Parish Church, Major (temporary Lieutenant-Colonel) J. F. Crombie, D.S.O., R.A.M.C.(T.) to Evelyn Nina, widow of Major Andrew B. King, 7th Argyll and Sutherland Highlanders, of Campsie, Stirlingshire.

FOXELL—JOHNSON.—At Christ Church, Sunderland, on Friday, 15th inst., Surgeon Humphrey Foxell, R.N., fifth son of the Rev. W. J. Foxell, M.A., Mus. Bac., Rector of St. Swithin's, London Stone, to Constance Nina, youngest daughter of Mr. and Mrs. Arthur A. Johnson, Gray-road, Sunderland.

LANGLANDS BOYD—KITCHING.—On Feb. 14th, at the Parish Church, Morecambe, Robert Langlands-Boyd, C.A.M.C., 1st Canadian Expeditionary Force, to Brenda, second daughter of Mr. and Mrs. T. Kitching, "Ricroft," Morecambe.

RIDDICK—JOHNSTON.—On Feb. 8th, in Edinburgh, Lieutenant-Colonel G. B. Riddick, R.A.M.C., to Florence Farquharson, daughter of D. S. Johnston, Esq., J.P., Alyth, Perthshire.

ROBERTS—HEARSON.—On Feb. 14th, at St. Mary's, Kippington, Sevenoaks, Captain J. F. Roberts, R.A.M.C., to Eveline Margaret, daughter of Mr and Mrs. Hearson, Sevenoaks.

ROBERTSON—LINDSAY.—On Feb. 14th, at St. Stephen's Church, Broughty Ferry, Captain W. A. Robertson, R.A.M.C., to Elsbeth Jessie, younger daughter of the late William Lindsay, J.P., and of Mrs. Lindsay, Miltonbank, Broughty Ferry, Forfarshire.

DEATHS.

COATES.—On the 16th ult., at Vancouver, Dr. Frederick William Coates, the eldest son of the late Mr. Martin Coates, of Salisbury, aged 78.

GOVER.—On Feb. 17th, at Flushing, near Falmouth, Lawford Dineley Gover, M.R.C.S., L.R.C.P., in his 60th year.

HEARD.—At Parkstone, Dorset, on Sunday, Feb. 17th, of heart disease, William Nevill Heard, M.B. (Cantab.), M.R.C.S., L.R.C.P., age 45.

RHODES.—On Feb. 12th, at Selwyn-gardens, Cambridge, William Atkinson Rhodes, L.D.S., Major, V.D., aged 62 years.

TULLOCH.—On Feb. 13th, at Port of Spain, Trinidad, John Patrick Tulloch, M.D.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY, Feb. 28th.—Papers:—Prof. the Hon. R. J. Strutt: Scattering of Light by Dust-free Air, with Artificial Reproduction of the Blue Sky. Preliminary Note.—Dr. J. R. Airey: The Lommel-Weber Ω Function and its Application to the Problem of Electric Waves on a Thin Anchor Ring (communicated by Prof. J. W. Nicholson).—Mr. W. Harrison: Investigations on Textile Fibres (communicated by Prof. W. H. Bragg).—Mr. W. L. Cowley and Mr. H. Levy: Critical Loading of Struts and Structure (communicated by Sir Richard Glazebrook).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Friday, March 1st.

LARYNGOLOGY (Hon. Secretaries—W. D. Harmer, Frank A. Rose): at 4 P.M.
Cases will be shown.

MEDICAL SOCIETY OF LONDON, 11, Chandos-st., Cavendish-sq., W. 1.

MONDAY, Feb. 25th.—8.30 P.M., Paper:—Sir James Cantlie, K.B.E.: Principles and Practice of Ambulance Work.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, Hammersmith-road, W.

FRIDAY, March 1st.—8.30 P.M., Paper:—Capt. E. F. Buzzard: Injuries to Nerves, their Diagnosis and Treatment.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY AND THURSDAY, Feb. 26th and 28th.—5 P.M., Milroy Lectures:—Dr. H. R. Kenwood: The Teaching and Training in Hygiene and Public Health—Some Criticisms and Suggestions. (Lectures II. and III.)

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY, Feb. 25th.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Arthur Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Arthur Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N. 15

MONDAY, Feb. 25th.—2.30 P.M., Children's Diseases: Dr. T. R. Whipham. Gynæcological Diseases: Mr. F. L. Provis. Surgical Operations: Mr. E. Gillespie. 3 P.M., Medical In-patients: Dr. R. M. Leslie. 7 P.M., Venereal Clinic: Dr. Kinsella.

TUESDAY.—10 A.M., Surgical Operations: Mr. J. Howell Evans. 2.30 P.M., Medical Out-patients: Dr. A. G. Auld. Surgical Out-patients: Mr. Howell Evans. Nose, Ear, and Throat Diseases: Mr. C. H. Hayton. X Rays: Dr. Metcalfe. 3.30 P.M., Medical In-patients: Dr. A. J. Whiting.

WEDNESDAY.—2.30 P.M., Medical Out-patients: Dr. T. R. Whipham. Diseases of the Skin: The Dermatologist. Eye Diseases: Mr. A. S. Worton. Operations:—Nose, Ear, and Throat: Mr. Hayton. 4 P.M., Eyes: Mr. Worton. 5 P.M., Venereal Clinic: Mr. E. Gillespie and Mr. Benians.

THURSDAY.—2.30. P.M., Medical Out-patients, Dr. A. J. Whiting. Surgical: Mr. H. W. Carson. X Rays: Dr. Metcalfe. Gynæcological Operations: Dr. A. E. Giles. 3.30 P.M., Special Demonstration:—Selected Surgical Cases: Mr. H. W. Carson.

FRIDAY.—2.30 P.M., Surgical Out-patients: Mr. Gillespie. Eye Diseases: Mr. A. S. Worton. 7 P.M., Venereal Clinic: Mr. E. Gillespie and Mr. Benians.

SATURDAY.—2.30 P.M., Surgical Operations: Mr. H. W. Carson.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY, Feb. 25th.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W 1.

TUESDAY, Feb. 26th.—3 P.M., Sir Richard T. Glazebrook, C.B.: A National Laboratory of Industrial Research. (Lecture I.)

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.C. 1.

Course of Lectures and Discussions on Public Health Problems under War and After-war Conditions:—

WEDNESDAY, Feb. 27th.—4 P.M., Lecture VII.:—Lady Barrett, C.B.E.: The Rôle of the Midwife in Relation to the Nation's Health.

SUMMER TIME, 1918.—The Home Secretary has announced in Parliament that for the present year summer time shall be brought into force on the morning of Sunday, March 24th, and shall continue until the night of Sunday, Sept. 29th, an arrangement that will give an additional five weeks of summer time this year.

EDITORIAL NOTICES.

In consequence of the pressure on our space and the shortage of paper, the Editor may be compelled to abbreviate communications, as an alternative to their rejection, when time does not allow them to be reconsidered by their authors.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, *and when accompanied by blocks it is requested that the name of the author, and if possible of the article, should be written on the blocks to facilitate identification.*

Offices: 423, STRAND, LONDON, W.C. 2.

MANAGER'S NOTICES.

TO SUBSCRIBERS IN THE UNITED STATES.

Messrs. Wm. Wood and Co., of New York, have relinquished their Agency for the supply of THE LANCET in the United States. The Manager of THE LANCET will be pleased to supply copies direct from the London Office to subscribers in the United States at the strictly prepaid rate of $8 for twelve months. Subscriptions may commence at any time. Drafts and Money Orders should be made payable to the Manager, Mr. CHARLES GOOD, 1, Bedford-street, Strand, London, W.C. 2, England.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 20th, 1918.

Date.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb. 14	...	55	48	40	44	45	Overcast
,, 15	...	56	46	37	41	42	Overcast
,, 16	...	73	43	32	33	34	Fine
,, 17	...	70	40	30	34	37	Fine
,, 18	...	61	43	23	30	32	Fine
,, 19	...	45	44	27	32	32	Foggy
,, 20	...	57	48	30	42	44	Raining

Other information which we have been accustomed to give in these "Readings" is withheld for the period of the war.

BOOKS, ETC., RECEIVED.

MILFORD, HUMPHREY, LONDON AND HARVARD UNIVERSITY PRESS.
The Principles of Acidosis and Clinical Methods for its Study. By Andrew Watson Selfards, A.M., M.D., Associate in Harvard Medical School Department of Tropical Medicine. $1.00

RICHARDS, GRANT, London.
Afforestation and the Partially Disabled: A Sequel to an Imperial Obligation. Industrial Villages for Partially Disabled Soldiers, Sailors, and Flying Men. By Thomas H. Mawson. 1s.

THORNLEY, W., AND SON, Leicester.
Population and Birth Control. Being the Presidential Address delivered before the Leicester Literary and Philosophical Society, Oct. 8th, 1917. By C. Killick Millard, M.D., D.Sc., M.O.H., and Chief Administrative Tuberculosis Officer, Leicester. 1s.

WILLIAMS AND NORGATE, London.
How to Enlighten our Children. A Book for Parents. By Mary Scharlieb, M.D., M.S. 3s. 6d. net.

Notes, Short Comments, and Answers to Correspondents.

THE NEW INDIAN QUALIFICATIONS AND THE GENERAL MEDICAL COUNCIL.

THE General Medical Council has declined to recognise as a registrable qualification in this country the membership of the State Medical Faculty of Bengal, as well as that of the College of Physicians and Surgeons of Bombay; and an application from the University of Madras for the recognition of its licence in medicine and surgery, which now requires a five-years' course of study, and was continued in order to obviate the creation of a third body similar to the two mentioned, was also not entertained. In the original application from the Bengal Faculty it was stated that in consequence of the discontinuance by the University of Calcutta (in common with most other Indian universities) of the examination for the licence in medicine and surgery, the Government of Bengal had created a separate examining body, called the State Medical Faculty, granting a membership corresponding to the discontinued University licence, and a licence which was intended to replace a qualification formerly taken by a class of practitioners known as sub-assistant surgeons, belonging to the Subordinate Medical Department. Application was made only for the recognition of the membership, and this was declined by the Council on the ground that the membership could be obtained on easier terms by licentiates, and that the course of study and examination proposed for the new licence was insufficient as a guarantee of efficiency, such as is required by the British Medical Act, 1886. The new licence comes within the terms of the recommendations to home licensing authorities adopted by the General Medical Council in 1912 in regard to the Subordinate Medical Department, which were briefly as follows:—

1. That the Council advises the licensing bodies to refuse recognition to the first, second, and third professional examinations of Indian diplomates belonging to the Department.

2. That all candidates belonging to the Department who apply for registration as medical students should be required to produce evidence of having passed one of the preliminary examinations recognised by the Council.

3. That no certificates of attendance on instruction or of examination other than those in the form prepared by the India Office should be accepted.

4. That all the licensing bodies should require the production of such certificates by candidates from Indian universities and medical schools.

5. That in no circumstances should the medical course in India of candidates belonging to the Department be accepted as equivalent to more than three of the five years of the medical curriculum.

6. That all candidates belonging to the Department should be required to take at least two years of study in the United Kingdom, and that the subjects of study in these two years should include the following subjects—namely, pathology, pharmacology and therapeutics, medicine, surgery, midwifery, vaccination, forensic medicine, hygiene, mental disease, and anæsthetics.

These resolutions were drawn up after consultation with the medical department of the India Office. The home licensing bodies might be prepared to accept, as qualifying for admission to their own Final Examinations, the course of study and examination for the membership of the Bengal Faculty; but the institution of these new Indian qualifications is too recent to allow of any general conclusion respecting the membership diploma to have been reached.

"ANIMAL LIFE AND HUMAN PROGRESS."

THE third of this series of lectures (see THE LANCET, Feb. 16th, p. 282) was delivered at King's College on Feb. 13th by Mr. C. Tate Regan, F.R.S., his subject being Museums and Research. The object, he said, which museums had in common was the preservation of material for education and research. In a natural history museum research was more important than education. The museum at South Kensington approached more nearly to the ideal of what such a museum ought to be than any other institution in the world. The collection of fishes alone numbered more than 100,000; birds formed the most complete collection in the world, representing more than half a million skins; insects were represented by about 3 million specimens. On the utilitarian side he pointed out the importance, for example, of the study of fishes. The value of fishes as food, the many products which they supplied, the importance of a knowledge of fishes

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Y.—Dr. R. A. Young, Lond.

(*Continued at foot of next page.*)

eaten by food fishes and of those which were the enemies of mosquito larvæ, the possible use of the study of fishes in the designing of submarines and in the means of combating underwater craft, and the damage done to cables by fish were subjects touched upon. Speaking of the changes in species, he said that although evolution was no longer an hypothesis the cause of evolution was a matter about which there was much theorising. As a systematologist he was led to the conclusion that a change of structure was followed and not preceded by a change of habits. This he illustrated by varying species of char, carp, and blenny. He concluded with an earnest appeal to the Government to recognise more clearly the important part which museums played in the development and prosperity of the nation. Lord Sudeley, who presided, said the British Museum, with the Natural History Museum at South Kensington, was a great trust for the whole world. The work done during the war in the preservation of food, timber, and corn from the depredations of insects was so great that it was hard to believe in its extent, and it had all been made possible by researches carried on at museums. Dr. Burrows, Principal of King's College, London, dwelt on the national value of museums, illustrating his remarks by the importance of properly organised archæological collections.

On Feb. 27th at 5.30 P.M. Professor F. Wood Jones, M.B., D.Sc., will deliver a lecture on "The Origin of Man," Dr. S. F. Harmer, F.R.S., presiding.

THE AMERICAN MEDICAL DIRECTORY.

THE official directory published by the biographical department of the American Medical Association is now in the press. It contains the names of all those who have the legal right to practise medicine. The names have been removed of 4400 physicians who have died, more than 10,000 new names have been added, and over 40,000 changes of location are noted. To the names of the 20,000 physicians who have joined the Medical Reserve Corps of the Army and Navy and the National Guard in active service a caduceus is placed. The price for pre-publication orders has been fixed at $10.

THE UNIFORM SYSTEM OF HOSPITAL ACCOUNTS.

ALTERED conditions of hospital work and administration, owing to the war, have affected the uniform system of hospital accounts adopted by the three great hospital funds of London, and it has been found necessary to modify that system in accordance with recent requirements. The three funds have therefore issued a memorandum revising the old system and incorporating all the regulations made between August, 1914, and January, 1918. Most of the alterations have reference to hospital work done by arrangement with public authorities—work which includes venereal diseases, London County Council school children, ante- and post-natal clinics, tuberculosis dispensaries, X ray work, National Insurance cases, naval and military patients, discharged disabled sailors and soldiers, patients sent by boards of guardians, pathological and other examinations, the supply of serums, and so forth. This list, although incomplete, indicates some of the directions in which hospital work has enlarged during, and in consequence of, the war, and the important part which these institutions are taking and will continue to take in the task of reconstruction. The memorandum can be obtained from Messrs. George Barber, 23, Furnival-street, Holborn, London, E.C. 4.

RATIONS AND CORPULENCE.

WE learn from the *Daily Express* that the action for defamation brought against Herr Lebius, editor of the *Staatsbürger Zeitung*, by the gendarme Richnow, has been successful. Lebius commented upon Richnow's war-time contour, suggesting that he obtained a more generous supply of food than he was entitled to, and the Third Penal Court of Berlin, holding that without medical testimony to the contrary the fact of rotundity of figure was not in itself proof of an unlawful consumption of food, inflicted a fine of fifty shillings on Lebius. At the same time, however, the judge appointed two ushers to observe the gendarme for a fortnight in order to ascertain whether a strict observance of the food regulations resulted in loss of weight.

F.R.C.S. would be greatly obliged if any reader will tell him him where he can obtain a Yiddish phrase-book, reading book, or dictionary. He can read Hebrew letters.

J. E. C.—A medical student desiring release from military service under Army Instruction No. 1751 (THE LANCET, Feb. 16th, p. 274) in order to resume his studies applies through the usual channels, stating the date on which he desires release.

E. C. M.—Radium is difficult to borrow and very expensive. Carbon-dioxide snow gives excellent results, but requires some practice to obtain from the cylinder of compressed gas. For babies a very short exposure (3-4 secs.) to the action of the snow is sufficient.

H. M. R.—Most observers would agree that the puffiness of the eyelids occurs in the morning, while if the patient be up during the day there is likely to be some œdema about the ankles towards night. At the same time, it is important to recognise two forms of œdema: (1) the cardiac type, due to cardio-vascular weakness, which, like cardiac dropsy from other causes, occurs at the most dependent parts or at the regions most remote from the heart; (2) the so-called renal œdema, which may be general in distribution in acute nephritis, shows a predilection for the loose tissues in the more localised incidence of œdema in chronic parenchymatous nephritis, hence its frequent occurrence in the eyelids, the scrotum, or even in the arms. Various explanations, not primarily mechanical, are offered of the latter variety of œdema, among them the condition of hydræmic plethora, or that of increased capillary permeability produced by alterations in the blood induced by the disease, or again the condition of salt retention. Even in this form, however, it may well be that gravity plays some part, as the tendency of the œdema to be more marked in the eyelids in the morning and in the ankles at night would seem to suggest.

(*Continued from previous page.*)

Letters, each with enclosure, are also acknowledged from—

A.—A. L.; A. B. M.; A. G. P.

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